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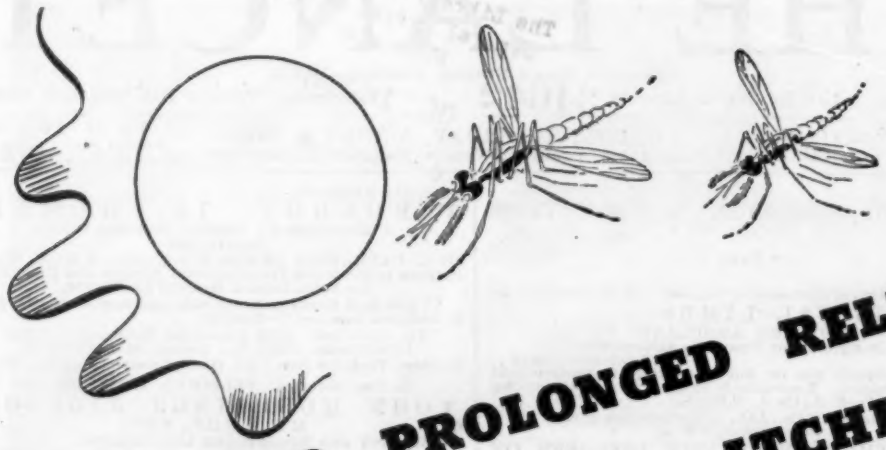

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## CONTENTS

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**ORIGINAL ARTICLES**

Some Nutritional Deficiencies in Man: Manifest Scurvy—Iron-deficiency Anæmia in Children—Deficiency due to Failure of Absorption. By Prof. L. S. P. DAVIDSON, F.R.C.P. ... 121

Reduction of Dust-borne Bacteria by Oiling Floors: Methods of Air Sampling—Experiments in the Canteen. By Major JOHN C. THOMAS, M.R.C.S., R.A.M.C. (*illus.*) ..... 123

Punch Prostatectomy: Operation and Aftercare—Dangers and Disadvantages—Fatality—Illustrative Cases. By W. E. M. WARDILL, F.R.C.S. ..... 127

Calcium and Phosphorus Studies in Thyrotoxicosis and after Subtotal Thyroidectomy. By J. DOUGLAS ROBERTSON, M.D. .... 129

The Treatment of Superficial Granulating Surfaces. By ARTHUR EDMUNDS, F.R.C.S. (*with diagram*) 130

**REVIEWS OF BOOKS**

Bacillary and Rickettsial Infections, Acute and Chronic. By Prof. William H. Holmes .... 130

Early Treatment of War Wounds. By William Anderson, F.R.C.S. ..... 130

**LEADING ARTICLES**

SINGLE AVITAMINOSES FROM MULTIPLE DEFICIENCIES 131

THEORY AND PRACTICE IN CHEST SURGERY ..... 131

DIAGNOSIS OF CRETINISM .. 132

SANDFLY FEVER ..... 133

**ANNOTATIONS**

The Capitation Fee ..... 134

Intravenous Oxygen ..... 134

Libraries Now and After .. 135

Pulmonary Lesions in Extrathoracic Tuberculosis ..... 135

Isinglass as a Blood Substitute ..... 135

Present Position of Venereal Disease ..... 136

Close-up of Spermatozoa .. 137

Extra Milk ..... 137

**SPECIAL ARTICLES**

Public-health Protection in the U.S.S.R. ..... 138

Medicine and the Law: Income Tax and Subscriptions ..... 138

Scotland: Advice to Edinburgh Graduates—Diphtheria Immunisation .... 139

**PUBLIC HEALTH**

From the Annual Reports: Middlesex—Warwickshire ..... 146

Infectious Disease in England and Wales .... 146

**LETTERS TO THE EDITOR**

Pensions Appeal Tribunals (Dr. Alfred Cox) ..... 142

Medical Service in New Zealand ..... 142

Radiodermatitis (Dr. M. H. Jupe, F.F.R.) ..... 143

Alopecia in Frightened Children (Dr. Lamorna Hingston) ..... 143

Success in Skin Grafting (Mr. Percival Cole, F.R.C.S.) ..... 143

"Sciatica" (Lieut. M. Good, M.D., R.A.M.C.) .... 143

Premarital Tests (Dr. Edward F. Griffith) .... 144

"Ingrowing Toenail" (Mr. J. G. Bonnin, F.R.C.S.) .. 144

Saccharin Shortage (Dr. E. S. Evans) ..... 144

**PARLIAMENT**

Notes on Current Topics: Last Touches to the Pharmacy Bill ..... 139

Question Time: Teaching of Mothercraft—Women Medical Officers in the Forces—Radiological Examination of Recruits—National Loaf in the Army—Analgesia in Childbirth—General Medical Council Appeals—Silicosis Research—Milk for School-children 140

**IN ENGLAND NOW**

A Running Commentary by Peripatetic Correspondents ..... 141

**OBITUARY**

Francis Bernard Chavasse, M.B.C.P. (*with portrait*) .. 145

John Slight Gray, M.B. ..... 145

John Patrick Gore-Grimes, M.B. ..... 145

Surgeon Lieutenant Ivor McNeil Drysdale, M.B. ... 145

John Rosslyn Earp, M.B.C.S. (*with portrait*) ..... 145

William Hanna, M.D. ..... 146

**MEDICAL NEWS**

University of Oxford ..... 147

University of Dublin ..... 147

Royal College of Surgeons of Edinburgh ..... 147

Royal College of Obstetricians and Gynæcologists 147

Beit Memorial Fellowships for Medical Research ... 147

School Medical Services ... 147

Food Poisoning ..... 144

Royal Appointment ..... 148

Symposium at Marx House 140

Civil Defence Awards ..... 142

**NOTICES**

Maternity in War-time .... 148

A Scientist's New Order ... 148

Scrupulous Satellites ..... 148

Honyman-Gillespie Lecture: Systolic Murmurs 137

Index to THE LANCET, Vol. I, 1941 ..... 130

Appointments, Births, Marriages and Deaths ... 147

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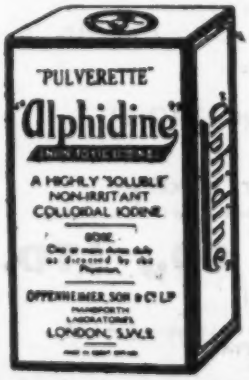


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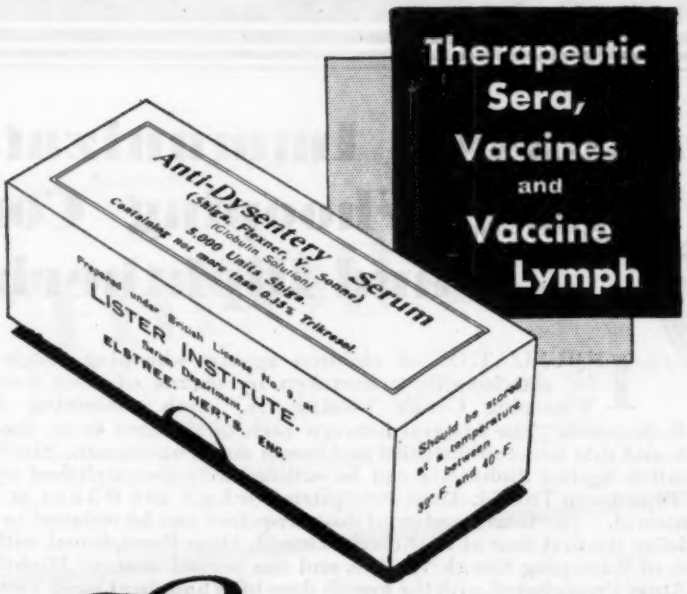


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# ORIGINAL ARTICLES

## SOME NUTRITIONAL DEFICIENCIES IN MAN

L. S. P. DAVIDSON,
B.A. CAMB., M.D. EDIN., F.R.C.P.
PROFESSOR OF MEDICINE IN THE UNIVERSITY OF EDINBURGH

DIETARY deficiency may result directly from an insufficient intake of the necessary food factors, or indirectly from failure in their absorption, or because of enhanced demands conditioned by increased metabolic requirements. The great majority of clinical syndromes due to dietary deficiency result from an inadequate intake or faulty absorption of vitamins or minerals. No clear-cut symptoms develop from insufficiency of carbohydrate or fat other than loss of weight and energy due to a low calorie intake. If the protein of the diet is excessively low over a long period, œdema occurs, wounds heal very slowly and imperfectly, and a marked wasting of muscles develops, as a result of the hypoproteinæmia.

In normal times fully developed syndromes such as beriberi, scurvy, pellagra and rickets are now uncommon in civilised countries. The only exception to this rule is anæmia due to iron deficiency, which I have shown to be present in at least 50% of women and infants belonging to the poorer classes. Minor degrees of deficiency in vitamins and minerals are, however, common. The clinical manifestations of such subclinical states are somewhat vague, the patient usually complaining of general ill health, loss of appetite and energy, and sometimes an increased tendency to infections. In children there may be, in addition, a failure to maintain a satisfactory weight and rate of growth and a proper development of the bony skeleton and teeth. The conception that such states of vague ill health are due to deficiencies of vital food factors is based on special chemical methods of assay of the blood and urine and on the clinical benefits which occur when the dietary deficiency is corrected. In some cases of dietary deficiencies it is extremely difficult to apportion the various manifestations present to a lack of individual food factors. Thus, fatigue unduly easily produced and loss of appetite are apparently the earliest symptoms pertaining to deficiency of both vitamins $B_1$ and C. The development of perfect teeth and the prevention of dental caries is dependent on an intake of adequate amounts of vitamins A, C and D, as well as of calcium. Follicular hyperkeratosis is claimed to be a dermal change induced by deficiency of vitamins A, C and the $B_2$ complex.

It is a widely accepted dictum that when a person suffers from malnutrition owing to dietary deficiency, the deficiency is seldom single. Even if one clinical syndrome dominates the picture, multiple deficiencies are generally present, although to a less degree. This dictum should apply equally to deficiency states conditioned directly by the ingestion of an insufficient or badly balanced diet or indirectly by a failure in digestion and absorption. Its acceptance is a wise procedure, for it necessitates in every case of deficiency disease the most careful consideration of the dietary history and a full examination of the clinical state in general and of the gastro-intestinal tract in particular. Finally, it postulates the need for supplying a diet adequate in all essential nutritional principles. This aspect was clearly demonstrated by a nutritional experiment carried out under my direction some years ago. Several hundred children belonging to the poorest classes, whose parents were mainly unemployed, were given a daily supplement of vitamins A and D in a capsule, while an equal number of children from the same school were given a similar capsule containing arachis oil. At the end of six months no significant difference was found in the two groups in regard to gain in height or weight or resistance to infection. Since it has been clearly proved that a supplement of a pint of milk daily will produce a remarkable improvement in nutrition of children who are taking a poor diet, it must be assumed that the experiment failed to achieve this result because only two out of the four vitamins which were deficient in the diet were supplied, while the important deficiencies of iron and calcium and first-class protein so necessary for growth were not corrected. The conclusions reached were that a deficient diet should be corrected by the giving of adequate quantities of the natural foods and that supplements of vitamins should be employed only for the treatment of established states of deficiency disease. Nevertheless, I have often had patients under my care with a fully developed deficiency disease clearly conditioned by an insufficiency of one particular food factor with no clinical evidence of other deficiency syndromes, in spite of the diet being grossly defective in many respects or intestinal absorption being gravely impaired.

The object of the present communication is to illustrate this aspect with the case-histories of nine patients suffering from a variety of deficiency states, all of whom I investigated during the spring of 1941 and demonstrated at a clinical meeting at the Western General Hospital, Edinburgh. The nine cases are divided into three groups: group 1, three cases of manifest scurvy; group 2, three cases of severe nutritional iron-deficiency anæmia in children; group 3, three cases of nutritional deficiency due to a failure in absorption of food factors from the small intestine, secondary to surgical interference.

### GROUP 1: MANIFEST SCURVY

The three patients were elderly men aged 64, 68 and 74, who for various reasons were living alone and undertaking their own catering and cooking. All had small incomes and admitted that with the increased cost of living they had been forced to curtail their expenditure on food. For at least six months they had made no attempt to do any cooking and lived on a diet of white bread, margarine, jam and tea, supplemented on occasions by bought cooked meat, sausage rolls or mutton pies. No fresh fruits or green vegetables had been eaten for at least six months, potatoes were very seldom eaten, while milk was purchased in quantities sufficient only for tea. The clinical manifestations of all three patients were the same—progressive weakness and loss of appetite, and the development shortly before admission to hospital of pains in the limbs due to widespread bruising and hæmorrhage into the muscles. The capillary-fragility tests were positive. Sponginess and bleeding from the gums was absent in all three cases. Two of the patients were edentulous and one had very septic teeth. A considerable degree of anæmia was present, the hæmoglobin percentages being respectively 58, 26 and 55. In two of the cases treatment with ascorbic acid produced a reticulocyte crisis followed by a rise in the red cells and hæmoglobin. In one case no response was obtained until supplementary iron treatment was given, when a satisfactory improvement quickly resulted. This patient had a hypochromic blood picture and had been losing blood from hæmorrhoids for a long time. Accordingly it is suggested that ascorbic acid will only produce its specific hæmatological effects if the material required for the formation of erythrocytes and hæmoglobin is available in adequate amounts. None of the three patients had free acid in the gastric juice, and this finding, on theoretical grounds at least, suggests the possibility of impaired digestion and absorption of vital food factors. It is, therefore, of interest to note that, despite the achlorhydria and the ingestion of a grossly deficient diet, none of the patients showed any clinical symptoms or signs to indicate a deficiency of vitamins A, $B_1$, $B_2$ complex or D, with the exception that one patient had a smooth atrophic tongue, which might be ascribed to deficiency of the vitamin-$B_2$ complex.

The administration of a well-balanced diet with large quantities of ascorbic acid rapidly caused a complete disappearance of all the clinical manifestations of scurvy and the restoration of normal health.

### GROUP 2: IRON-DEFICIENCY ANÆMIA IN CHILDREN

The three children were aged 5, 6 and 8 years and came from one family. They had been shockingly neglected by an alcoholic mother who had been drinking heavily for at least two years. They were admitted to hospital in a dirty, verminous condition. The striking feature

of their appearance was intense pallor, which was due to severe hypochromic microcytic anæmia. The hæmoglobin levels on admission were 17%, 23% and 45%. The youngest child, with the lowest hæmoglobin, showed much œdema, especially of the lower limbs, which was thought to be due partly to the severe anæmia and partly to hypoproteinæmia. The children's intelligence was satisfactory and no evidence of organic disease in any organ was found. A careful investigation of their diet showed that for at least a year before admission to hospital no fresh fruit, green vegetables or eggs had been consumed. One pint of fresh milk for the whole family was purchased on rare occasions. Their meals consisted essentially of white bread, margarine, jam and tea, sweetened with condensed milk. Sometimes, when their father found time to cook, they were given a soup of some kind, or more rarely a stew. Fried chip potatoes were eaten fairly frequently at tea. On occasions a mutton pie or some cooked meat was purchased. Cod-liver oil was never taken.

Despite a diet which appeared to be grossly defective in many respects, these growing children were of normal height and weight, showed no undue capillary fragility or other hæmorrhagic features suggestive of scurvy, no clinical or radiological signs of rickets, and no dermal, neural or cardiac changes suggestive of vitamin-B deficiency. Gross dental caries was present. On a well-balanced diet, with the addition of ferrous sulphate, there was a rapid rise in the hæmoglobin level, and in a few weeks the children were restored to perfect health.

GROUP 3: DEFICIENCY DUE TO FAILURE OF ABSORPTION

CASE 1.—Female aged 60. The patient was sent to Professor Learmonth because of diarrhœa and frequent vomiting, with a suggested diagnosis of subacute intestinal obstruction. Three months previously she had had a gastro-enterostomy performed in London for pyloric obstruction. A few days after the operation she started to vomit, but as air-raids were frequent and the patient very nervous the vomiting was attributed to functional causes. The patient returned to her home in Scotland, where she ate a diet which became progressively less and less satisfactory both qualitatively and quantitatively. She says that this reduction in her diet was made because she was afraid to eat in case pain and vomiting recommenced. About one month before I saw her a watery diarrhœa began, the number of motions being as high as 9 daily, incontinence developed and vomiting began again. Anorexia was severe, weight was rapidly lost and the tongue became painful, red and fissured. Pigmentation of the skin, especially of the parts exposed to sunlight, was noticed, and by the time the patient was admitted to a nursing-home, the classical picture of fully developed pellagrous skin lesions was observed. The temperature was elevated and the patient was mentally dull. A moderate degree of iron-deficiency anæmia was present, the blood-count being: red cells 3,400,000, Hb. 62%, colour-index 0·91, white cells 9800.

Recognising the nutritional aspects of the case and suspecting that the gastro-intestinal symptoms were not due to intestinal obstruction from adhesions, Professor Learmonth put the patient under my charge. She was given large doses of nicotinic acid, yeast and iron by mouth and liver extract by injection. Within 48 hours the vomiting and diarrhœa had ceased and appetite had returned. Within a week a remarkable improvement was observed in the pigmentation, glossitis and dermatitis, and within six weeks the patient was restored to perfect health and normal weight.

CASE 2.—Male aged 19. At the age of 16 the patient developed acute appendicitis. Perforation occurred, with subsequent peritonitis. Appendicectomy with suprapubic drainage was carried out. A fæcal fistula developed later, which would not close. According to his operation notes, an ileo-transverse colostomy was performed, with exclusion of the distal loop. The fistula closed after three months but subsequently recurred. At a later date an operation for subacute intestinal obstruction was performed. Despite further surgical procedures the fistula never closed; injection of uroselectan through the abdominal sinus indicated that a communication existed between the cæcum and the rectum. In addition to the loss of much food residue through the external fistula, vomiting and diarrhœa were constantly present and the boy's condition steadily deteriorated.

By the time he was admitted to the wards of the Western General Hospital under the charge of Professor Learmonth he was grossly emaciated and very pale. Physical examination revealed no evidence of organic disease in the heart, lungs or abdomen other than the features already recorded. His blood-count was: red cells 2,500,000, Hb. 60%, colour-index 1·16, white cells 7000; the blood picture was typical of pernicious anæmia. The test-meal showed a histamine-fast achlorhydria and a sugar-tolerance test showed a flat blood-sugar curve characteristic of poor intestinal absorption. Despite the long history of anorexia, vomiting, diarrhœa and external loss of intestinal contents no clinical evidence of scurvy, pellagra, neuritis or tetany was found.

The patient was given 4 c.cm. of Campolon by injection and ferrous sulphate tablets by mouth. A reticulocyte rise of 14% resulted, but the blood-count remained stationary for twelve days. Between the fifth and seventh day, 30,000 units of vitamin $B_1$ was given by parenteral injection. From the twelfth to the twenty-fifth day of treatment, 2 c.cm. of Anahæmin was given every second day, and thereafter on every third day during the period of this therapeutic investigation. The reticulocytes rose to 17% on the ninth day after the commencement of treatment with anahæmin, but the red-cell and hæmoglobin levels remained stationary during the next 18 days. He was given 500 mg. of ascorbic acid daily concomitantly with the iron, liver extract and vitamin B. A third rise of reticulocytes to 11% occurred and the blood-count began to improve, a gain of half a million erythrocytes being made during the next ten days. Large daily doses of nicotinic acid were now given but no further improvement in the blood-count resulted. Finally the protein of the diet was increased to 150 g. daily, and the red cells steadily rose to 4,500,000 and the hæmoglobin to 88% in four weeks, with a corresponding improvement in the patient's general health and strength.

As the fistula was still discharging Professor Learmonth decided to operate. At operation it was found that the loop of small intestine which had previously been anastomosed with the transverse colon was the jejunum and not the ileum. The length of small intestine available for absorption was about four feet. This was considerably less than indicated in the records of the previous operation. Unfortunately the patient only survived the operation for a few days, death being due to peritonitis resulting from leakage at the fifth and last anastomosis performed for the restoration of the continuity of the bowel. Histological examination of long strips of the stomach, extending from the fundus to the pylorus, showed the mucosa to be healthy, no evidence of glandular change or muscular atrophy being present.

These findings clearly indicate that the blood picture of pernicious anæmia in this patient was not the result of a failure in the production of Castle's intrinsic factor by the stomach but was conditioned by defective absorption. It is in this group of the megalocytic anæmias that I have often found the response to parenteral liver therapy unsatisfactory until it is supplemented by ample amounts of vitamins and minerals and in particular by a high protein diet.

CASE 3.—Male aged 45. Twelve years previous to admission to hospital the patient had a duodenal ulcer which perforated. At operation the perforation was closed and the peritoneal cavity drained. Recurrent epigastric pain eventually led to a gastro-enterostomy being carried out in 1938. Twelve months later the patient began to have a watery diarrhœa, with two to six motions daily. In January, 1941, two months before admission to the wards under the charge of Professor Learmonth, a rapid deterioration set in, the patient having as many as 36 stools a day. Four stones in weight were lost during this period. On physical examination the patient was found to be still fairly well-nourished, the skin being soft and elastic and the weight being approximately 10 st. There were no abnormalities of the heart or lungs. A mild hypochromic anæmia (Hb. 86%) was present. A history of tingling and numbness and carpopedal spasm suggestive of tetany was obtained, but the blood-calcium was normal. A diagnosis of gastro-jejuno-colic fistula was made on clinical grounds, and this was confirmed by X rays and subsequently at operation. Some ten days after the operation the patient developed a pulmonary infection from which he died. At autopsy bronchopneumonia and empyema were found. There were no signs of peritonitis. Correction of the gastro-jejuno-colic fistula had been successfully accomplished.

It was remarkable that despite the prolonged and severe diarrhœa and the fact that so much of the absorptive area of the small intestine had been short-circuited, the patient showed only a marked loss of weight, and no dermal, glossal, neural or vascular features suggestive of deficiency of any vitamin.

### DISCUSSION

The nine cases reported clearly indicate how, in the presence of a diet apparently grossly deficient in many factors, a single clear-cut deficiency syndrome may dominate the clinical picture. Moreover, the dominant syndrome may be that of a particular vitamin or mineral deficiency in one patient and a different picture may be present in another ingesting an apparently similarly deficient diet. In the group of patients with manifest scurvy, it would be easy to argue that the dominant picture was scurvy because of the widely accepted view that vitamin C is one of the vitamins that man is unable to synthesise or store in the body for any length of time. But if this simple explanation is correct, it would be necessary to explain why the three young children with severe iron-deficiency anæmia, whose requirements of vitamin C should be high in view of the demands of growth, showed not a single sign of the scorbutic syndrome. A study of the three cases of indirect dietary deficiency resulting from diarrhœa, small intestinal hurry and reduction of available absorptive areas in the small intestine showed that each developed entirely different clinical pictures. Why did the patient with the gastro-jejuno-colic fistula who had the most severe and the most prolonged diarrhœa show no obvious signs of vitamin or mineral deficiency and only loss of weight? Why did the boy of 19 develop pernicious anæmia with no signs of neuritis or dermatitis, while the woman of 60 developed an iron-deficiency anæmia with typical pellagrous skin and tongue lesions? At present no answer can be given to these and other questions, but it is apparent that there still exist many gaps in our knowledge of deficiency diseases in man which can be bridged only by careful study of the factors which affect the absorption, synthesis, storage and utilisation of vital constituents of food. Finally, the accepted standards of minimal amounts of vitamins and minerals needed to prevent the appearance of clinical symptoms and signs obviously requires reconsideration.

### SUMMARY

A fully developed deficiency disease due to lack of one particular food factor may be present although the diet is defective in many respects or intestinal absorption is gravely impaired.

This is illustrated by three cases of manifest scurvy in elderly men, three of severe nutritional iron-deficiency anæmia in children, and three of nutritional deficiency due to failure of intestinal absorption after operation.

The different clinical pictures seen in these cases cannot be explained on our present knowledge of the absorption, synthesis, storage and utilisation of foodstuffs, and further detailed studies of the factors influencing these are needed.

I wish to record my thanks to Professor McNeil and Professor Learmonth for allowing me to investigate the patients in group 2 and group 3.

## REDUCTION OF DUST-BORNE BACTERIA BY OILING FLOORS

JOHN C. THOMAS, M.R.C.S.

MAJOR, R.A.M.C.; OFFICER IN CHARGE OF A MILITARY LABORATORY

IT is becoming increasingly recognised that floor dust plays an important part in ward cross-infection, and it is reasonable to suppose that it may be equally important when it accumulates in places occupied by large numbers of people—for example, in air-raid shelters. This hazard is undoubtedly enhanced by the inadequate ventilation associated with the blackout.

Most dust organisms are innocent saprophytes, but the presence of pathogens in many circumstances is now well established. Owing to the ease with which they are recognised, most of the work done on dust pathogens has been concerned with hæmolytic streptococci. They have been recovered from the dust of burn wards and puerperal and scarlet-fever wards (Cruickshank 1935, White 1936, Allison and Brown 1937); and under experimental conditions van den Ende, Lush and Edward (1940) have shown that a group-B (Aronson) streptococcus retains its virulence in dust for at least 4 weeks. I have confirmed this with group-A strains, and have repeatedly grown *Streptococcus pyogenes* from the air, bedclothes and dust of wards in which there have been outbreaks of follicular tonsillitis. Recently, during a single sweeping of such a ward and its annexes, 102,000,000 of these organisms were recovered from the dust (Thomas 1941). Other pathogens known to persist in dust are *Corynebacterium diphtheriæ*, the pneumococcus and the tubercle bacillus, and a number of viruses probably retain their virulence there also.

This paper describes experiments made in hospital with spindle oil,* which was shown by van den Ende and his colleagues to be highly effective in reducing aerial contamination from dust. It is interesting to note that it has taken more than 30 years and the present conditions to demonstrate the importance of an oil which was the main constituent of 31 dust-laying oils investigated by Heise in 1909.

Most of the experiments were made in the hospital canteen. Other experiments were made in a ward during an outbreak of acute streptococcal tonsillitis (mixed types 3 and 6), during which large numbers of β-hæmolytic streptococci were recovered from the air, while a smaller series of tests was made by oiling the operating-theatres corridor. The experiments were made in collaboration with the team of workers at the National Institute for Medical Research, as part of a larger investigation into the problems of air-borne infection (Andrewes et al. 1940).

* Spindle oil is a crude, heavy, petroleum oil, used extensively in the cotton industry as a lubricant. The samples used had the following specifications: colour, yellow; odour, strong; cloud test at 0° C. clear; specific gravity, 0·886; kinematic viscosity 53·21 centistokes at 20° C., 22·3 centistokes at 37·8° C; Redwood viscosity 201 sec. at 70° F., 95 sec. at 100° F., 52 sec. at 140° F.; flash point (Pensky-Martin) closed 178° C. (352° F.), open 187° C. (369° F.). The oil was supplied by Stemco Ltd. under the name Yellow Oil No. 2.

### METHODS OF AIR SAMPLING

Air counts were made, usually on 10 c. ft. volumes, on 4 in. plates of a 1/500,000 gentian violet blood-agar (prepared by adding 2 ml. of 1 in 10,000 aqueous gentian violet solution to 100 ml. of melted nutrient agar just before adding 10% horse blood), which Garrod (1933) showed to be a selective medium for certain aerial pathogens.† The plates were incubated aerobically for 18–24 hours and the colonies counted as: total organisms; total α-hæmolytic organisms; and β-hæmolytic streptococci. The last were picked off into serum broth and tested after 15 hours for soluble hæmolysin production; positive strains were examined serologically by the late Dr. F. Griffith, of the Research Institute for Streptococcal Infections, Hammersmith. A few plates were incubated anaerobically and yielded almost pure cultures of streptococci (Fuller and Maxted 1939). In all, 1026 plates were exposed, 703 in the canteen and 323 in the wards.

The medium was tested before use by exposing a number of plates simultaneously with others of plain blood-agar both in a ward with a high streptococcus/saprophyte ratio, and in the canteen where the ratio is reversed. In each case Garrod's findings were confirmed (table I). There is a considerable reduction in the total count (about 95%), due almost entirely to a reduction in saprophytes, the streptococci being almost unaffected. The gentian violet blood-agar medium inhibits the growth of *Bacillus subtilis* and moulds, and yields plates entirely free from spreaders. In the same table are given comparative figures for two other experiments, A and B (not directly related to spindle oil tests), in each of which the reduction ratio is of the same order. That it is lower in experiment A than in experiment B is directly referable to the fact that the dust saprophytes had already been artificially reduced in A, while in B they were allowed to accumulate.

A number of methods are available for enumerating bacteria in air, none of which is perfect. The simplest is to expose petri dishes and allow organisms to precipitate on them for a given time. Counts by this method, however, vary considerably with experimental conditions

† A smaller series of experiments suggest that crystal violet and methyl violet 6B exert a similar selectivity in the same concentration.

such as bacterial size, air currents, humidity, and size and position of the plates. With simple plates it is common to find an artificially high saprophyte/pathogen ratio (as is to be expected from the relative sizes of the two types); indeed, unless there are a very large number of pathogens in the air none may be grown at all. Wells's air-centrifuge, in which the organisms are deposited on the sides of agar-lined tubes, is a considerable improvement on simply exposed plates for quantitative analysis. But the apparatus is troublesome to use and difficult to procure, and since its sensitivity to spreaders is high, counts are often difficult to make with any accuracy.

Bourdillon, Lidwell and Thomas (1941), by combining the principle of Owen's dust-counter with that of Hollaender and dalla Valle's (1939) apparatus for air counts, have recently produced at Hampstead an efficient piece of apparatus for this purpose which they call the "slit sampler" ‡

Essentially it consists of a small, air-tight, metal box in which is a mechanically rotated table for the Petri dish turning at a constant, slow speed (2 revolutions per min.). Air is drawn into the chamber by a power-driven pump, through a radial slit, measuring 1·1 in. by 0·01 in., in the top of the box, the rate of flow being controlled by an adjustable valve in the suction circuit. The actual rate of air-flow over the plate is measured by a simple water manometer calibrated by a flow-meter with a single mark equivalent to a flow of 1 c. ft. per min., at which rate the machines are designed to work. Not all the organisms entering through the slit are retained on the plate; some are inevitably carried over and lost. With a constant rate of air-flow, however, this error, though possibly selective, should be constant and therefore of no significance. The efficiency of our machines was believed to be upwards of 70% for organisms of 2$\mu$ or more in size. It fell, however, sharply with smaller organisms, and when tested against a single organism spray of *Strep. salivarius* or *Chromobacterium prodigiosum* was as low as 15–20%. There is not this falling off of efficiency with smaller organisms in the high-plate machines, while their efficiency against larger organisms is of a high degree. In the present spindle oil experiments we are dealing with these larger organisms and aggregates and there is no reason to doubt the efficiency of the apparatus for such a purpose. All my experiments have been made with these machines.

TABLE I—AIR-SAMPLING: COMPARISON OF BLOOD-AGAR (BA) AND 1/500,000 GENTIAL VIOLET BLOOD-AGAR (GVBA) AS MEDIA FOR AERIAL COUNTS

| | Preliminary tests | | | | Subsequent tests (total organisms only) | | | |
|---|---|---|---|---|---|---|---|---|
| | Total organisms | | β-strepto-cocci | | Expt. A | | Expt. B | |
| | BA | GVBA | BA | GVBA | BA | GVBA | BA | GVBA |
| Plates exposed | 92 | 92 | 30 | 30 | 62 | 134 | 45 | 124 |
| Total count | 12,334 | 3284 | 35 | 305 | 4827 | 3096 | 9854 | 6904 |
| Vol. of air tested (c. ft.) .. | 212 | 920 | 30 | 300 | 124 | 1340 | 90 | 1240 |
| Organisms per c. ft. | 58·21 | 3·57 | 1·17 | 1·02 | 38·90 | 2·31 | 109·8 | 5·57 |
| Reduction ratio .. | 16·3/1 | | 1·14/1 | | 16·8/1 | | 19·7/1 | |

In a preliminary control period the efficiency of the slit sampler (SS) was tested simultaneously against simply exposed (SE) plates (table II). The SS plates recovered nearly six times as many organisms in the same time as the SE plates. The most significant increase, however, is not in the total number of organisms but in the finer, more slowly sedimenting streptococci, of which eleven times as many were recovered. This was strikingly demonstrated on one occasion in the epidemic ward when an SS plate grew 39 β-hæmolytic streptococci compared with a single colony appearing on an SE plate. Again, in a clean surgical ward of another hospital we recovered β-hæmolytic streptococci on 5 out of 8 SS plates, although a continuous series of SE plates over a period of days had failed to demonstrate a single pathogen.

TABLE II—COMPARISON OF SLIT SAMPLER (SS) AND SIMPLY EXPOSED PLATES (SE) (100 PARALLEL PLATES)

| Mean colonies per plate | SS | SE | RATIO SS/SE |
|---|---|---|---|
| Total organisms .. .. | 81·79 | 14·22 | 5·75 |
| Total α-hæmolytic organisms | 44·50 | 8·91 | 4·99 |
| β-streptococci .. .. | 1·00 | 0·09 | 11·11 |

The slit sampler, moreover, gives remarkably constant results when sampling a steady atmosphere, and yet by reason of its speed of sampling is sensitive enough to reflect in the plate-count any sudden event which increases the aerial flora. In the same ward consecutive plates yielded 84, 84, 98 and 85 organisms of which 24, 22, 24 and 23 were β-hæmolytic streptococci, while an adjacent ward gave comparably steady counts of 34, 26, 30, 29, 31 and 25 total organisms with 9, 9, 10, 8, 6 and 10 β-hæmolytic streptococci growing on gentian violet blood-agar.

### EXPERIMENTS IN THE CANTEEN

The canteen is a large, low room of nearly 35,000 ft. capacity, with doors at either end; it is relatively poorly ventilated in winter owing to the blackout. The floor is of plain, unpolished, oak boards. It is open for twelve hours a day and during these experiments was used by probably 1000 people each day, up to 200 people being present at a time. It contains two full-size billiard tables, a table-tennis table, and many tables and chairs, apart from the serving counters. The actual floor space walked on is therefore much less than the total of 2900 sq. ft., and there is concentrated wear on certain parts. The slit samplers were placed in a constant, central position; the slit entrance was 3 ft. from the floor.

*Control experiments.*—At the outset the canteen was swept in a haphazard manner by a number of convalescent patients, who raised a considerable amount of dust. The aerial counts rose from a mean of 0·7 organism per c. ft. before sweeping to 24·1 per c. ft. during the actual sweeping period. The fall in the air count as soon as sweeping was completed was very rapid, and even with peaks of 300 or more organisms per plate, the count fell to normal within 30 min. (fig. 1). This is due to the fact that many of the dust organisms are adherent to minute particles of rapidly sedimenting dust (during sweeping a visible film of dust appears on the plates).

With the introduction of organised sweeping the peak counts were promptly halved, the mean sweeping counts being 10·4 per c. ft. for three consecutive days. During this time the men learned to sweep in the same way each day, so that the subsequent counts should be as nearly comparable as possible. These experiments proved the adage "too many cooks . . ." for much more dust was caused by a number of men sweeping than by one going quietly about the job (fig. 2). It was often noticed that subsequent dusting produced an even higher peak than that met with during sweeping. This is because during dusting organisms are shaken downwards off walls and other surfaces above the slit samplers, whereas during sweeping the organisms have to rise from the floor before they collect on the plates.

During these experiments the introduction of hypochlorite aerosol "mists" had very little effect on the number of dust organisms raised (fig. 1C); and the same was true of scrubbing the floor and treating it with a light petroleum "cleaning oil" (fig. 1D). The counts during this control period (with the exception of the haphazard sweeping day), were all of the same order, and it was convenient to take as a control figure 10

‡ The sampler has not yet reached its final form, and I am grateful to Dr. R. B. Bourdillon and Mr. O. M. Lidwell for allowing me to give this brief description of the earlier machines which we used for this work. Subsequent designs have shown that increased efficiency is obtained by bringing the plate closer to the slit, and experiments with these new high-plate machines are in progress. The experiments described here were made with mark II machines in which the plate was at a fixed distance of 20 mm. from a thin, square-ground slit, as compared with the 2–4 mm. distance in the later models.

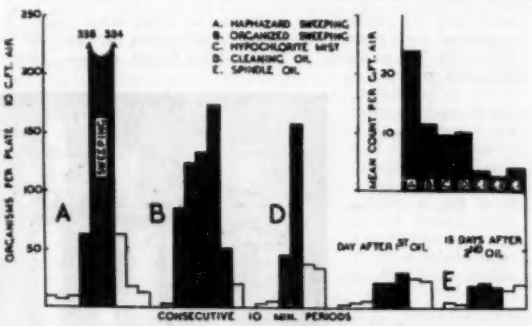


FIG. 1—Air-counts during sweeping in the canteen.

organisms per c. ft. of air growing on gentian violet blood-agar (equivalent to 170–200 organisms growing on blood-agar). The mean β-streptococcus count at this time was 0·53 per plate.

*Spindle-oil experiments.*—At the end of the control period on Dec. 5, the floor was again scrubbed with hot water and soap, and a gallon of spindle oil per 1000 sq. ft. was then applied. It was rubbed in by hand, using a well-soaked bunch of rags until the surface was not more than faintly oily to the touch, particular attention being paid to cracks between boards and in the surrounding wainscot (the same method can be applied to linoleum). Nothing more was done to the floor afterwards except that it was swept with a soft broom and oiled afresh at appropriate times. Counts were made daily, before, during and after sweeping; in some cases they were prolonged throughout the day.

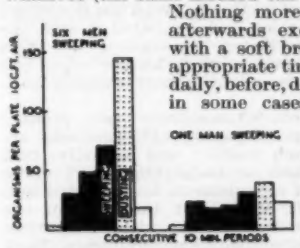


FIG. 2—Effect of number of people sweeping upon dispersal of dust in the canteen.

The oil costs 2*s.* 6*d.* per gallon, with a reduction for large quantities. A gallon is sufficient for one application to a ward measuring 20 ft. by 50 ft., and is effective for periods up to two months, depending on the amount of traffic. Nothing further has to be done to the floor after treatment, so that the oil effects a considerable saving in labour and money.

The application of spindle oil resulted in an immediate and striking fall in the sweeping peak, which remained low for sixteen days (fig. 3). Immediately after the oiling the mean count was 2·4 per c. ft., 72 colonies only growing compared with 298 on the last control day. This low level was maintained for ten days, after which there was a slow, steady rise. The mean count during the sixteen-day effective period was 3·66 per c. ft. air, after which the count jumped suddenly to the pre-oiling level. On Dec. 22 the floor was oiled afresh with the same effect, the mean count during a slightly lengthened effective period of 18 days being 2·46 per c. ft. During this period there were two noticeable peaks (fig. 3, a and b), on Dec. 27, 1940, and Jan. 1, 1941. On the night before each of these peaks (Boxing Day and New Year's Eve), the canteen had been used as the buffet for a dance in the adjacent hall, with the result that the tables were left littered with an abnormal amount of debris. On each occasion it was necessary to clear this during the experiment and the increased counts are undoubtedly due to the dust raised from these tables, over which, of course, the floor oil had no control.

When the floor was oiled for the third time, on Jan. 11, a proprietary preparation was used which consists mainly of spindle oil with some, apparently unnecessary, additions. The effective period for the third oiling was still longer—23 days with a mean count of 4·08 per c. ft.

There was a significant reduction not only of total organisms but of β-streptococci during the periods when the oiling was effective, although detailed investigations of these organisms were only made during the first-oiling period. Then only 49 presumptive streptococci grew on 227 plates, a mean of 0·21 per plate compared with 0·53 in the controls. This represents a reduction of 2·5 : 1.

After the oiling of the floor every part of the canteen became cleaner, since no dust was dissipated by people walking about, and any they brought in with them had only to fall to the ground to be fixed. This general cleansing effect was strikingly shown by the condition of the billiard tables. Immediately after the first oiling, plates exposed while the tables were being brushed gave counts considerably higher than those during sweeping itself, although the tables were 15 ft. away from the machines. On the third day after oiling this brushing peak was smaller and next day had disappeared; nor did it subsequently return during the effective period of the oil although it had constantly been noticed during the control period (fig. 4). The oil, by retaining the dust on the floor had, among other things, cleaned the billiard tables. This observation may have value in relation to billiard saloons as incubating grounds for infection.

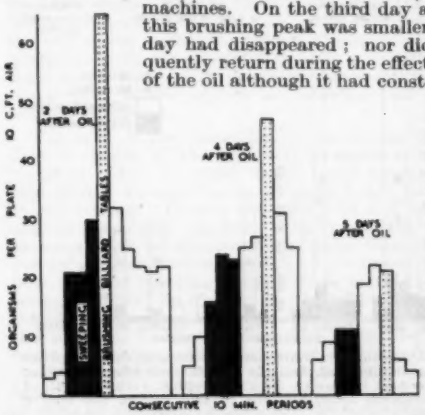


FIG. 4—General cleaning effect in the canteen of spindle oil on the floor. Counts before and after sweeping the floor and brushing the billiard tables.

## EXPERIMENTS IN WARDS

Confirmation of the effectiveness of spindle oil in laying dust organisms was obtained in a hospital ward in the course of a more extensive investigation into the problems of prevention of cross-infection. A surgical ward was chosen which was divided by a glass partition and door into a 16-bed and a 10-bed section. The 16-bed section was used for testing the oil and the 10-bed section as a control. At the time of the experiments a mild epidemic of streptococcal tonsillitis was waning; this was mainly due to a type-6 streptococcus, but some patients had exhibited a type-3 infection. All the patients at some time or another had given positive

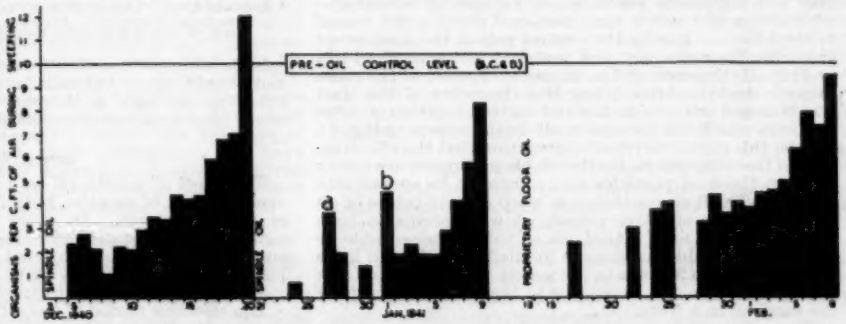


FIG. 3—Reduction of dust-organisms by the application of spindle oil to the canteen floor. Mean number of organisms per c. ft. air each day during sweeping time.

throat swabs, and the most likely source was an old chronically suppurating mastoid in one corner of the ward. Counts were made simultaneously in both wards, the patients either sitting quietly or lying in bed at rest. After a series of control observations the beds were straightened (not properly made but the counterpanes shaken and put straight); counts were made during and after this. The wards were swept out half an hour later and the sweeping peak counted (fig. 5). On every day and in each ward the same sequence of events occurred: in the quiet periods the counts were low, approximately half of the total organisms being type-specific streptococci; during bedmaking a cloud of organisms was thrown into the air, the streptococcus count being more than doubled and the total organisms rising to more than 400 per plate. Sweeping in the control ward caused a similar peak in the counts with a rise in the numbers of streptococci in the air. In the oiled ward, however, the sweeping peak was almost non-existent. Similar results were obtained in a small, single bed cubicle, in which test plates during sweeping

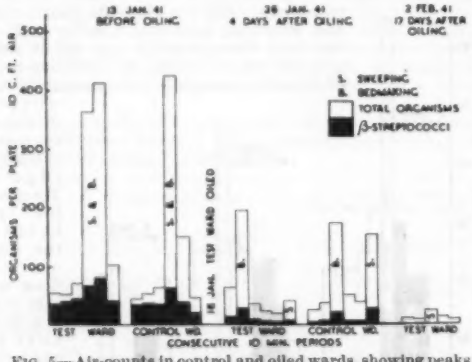


FIG. 5—Air-counts in control and oiled wards, showing peaks during bedmaking, and the satisfactory effect of oiling the floor on the count during sweeping. An epidemic of streptococcal tonsillitis was present during the earlier counts.

grew only two or three streptococci compared with nearly 150 per plate before oiling.

## DISCUSSION

Spindle oil can be applied to both wood and linoleum; if used directly on concrete it soaks in rapidly and the effect is soon lost; experiments are in hand to find an efficient proofing substance which will prevent this rapid absorption. By using it on wooden and linoleum-covered floors the number of organisms projected into the air during sweeping is considerably reduced, and the reduction lasts for increasing periods with each subsequent application, up to a maximum of six to eight weeks. The physical dust-laying action is more prolonged than the bacteria-laying effect shown by these experiments. After a fourth oiling of the canteen floor the effective dust-laying period ran well into the seventh week, and even at this time counts showed a mean of only 6·5 organisms per c. ft. of air during sweeping—which was still below that obtained during the pre-oil control days. During the control period the dust swept from the floor was dry and powdery; it spread widely and rapidly throughout the air and every part of the room became dusty. After oiling the character of the dust was changed: it was darker and matted together in large particles which did not rise at all during sweeping (fig. 6). It is on this purely physical aggregation that the effectiveness of the oil depends, for the viable pathogens are firmly fixed to the dust particles and so cannot be spread into the air. The floor continues to weep minute traces of oil throughout its effective period, at what seems to be a fairly constant rate. Analyses of total ether-soluble or chloroform-soluble substances in oiled dust showed little difference up to 29 days in the wards, although there was approximately a 50% reduction in the well-worn parts of the canteen in a fortnight.

The oil itself is not bactericidal, serving merely to retain the organisms in the dust. They are still viable and may be pathogenic so that the dust must still "be regarded as a potential source of infection and should be disposed of suitably" (van den Ende et al. 1940).

Spindle oil imparts a pleasant, dark, matt colour to ordinary boards, and the final surface is not slippery. There may be a slight slipperiness for a few hours immediately after oiling but this rapidly disappears. We have opened the canteen as soon as two hours afterwards, and neither there nor in the wards have we had a fall or accident for a period of more than four months. The opinion of men on crutches or on Böhler irons is that the floor surface is much preferable to polished ward floors. Dr. van den Ende kindly measured the coefficient of friction between our floors and both rubber and leather soles, and compared it with untreated and polished ward floors. He showed that there was no significant difference to worn leather soles, but that the oiled surface was slightly more slippery to a rubber shoe (table III).

FIG. 6—Dust from the canteen floor before (left) and 29 days after (right) treatment with spindle oil. Note absence of dust cloud in the oiled sample. Both bottles were shaken immediately before the photograph was taken.

The ward experiments demonstrate two points: first, that large numbers of pathogenic organisms are present in the air of such wards; and secondly, that every common event such as bedmaking or sweeping causes a further cloud of organisms to be projected into the air (cf. Cruickshank 1941). At the time of the counts shown in fig. 5, dust assays yielded between four and five million β-streptococci per gramme. Such dust is, therefore, a potent reservoir of infection and must be respected and treated as such. The application of spindle oil to the floor does much to minimise this danger, and should prove valuable in controlling the spread of infection not only in hospital wards, but in any place where large numbers of people are collected for any length of time.

TABLE III—COEFFICIENT OF FRICTION ($k$) * OF OILED AND UNOILED FLOORS (VAN DEN ENDE)

| Site | $k$ (mean of 4 readings) | |
|---|---|---|
| | Worn leather floor | Rubber floor |
| Canteen: | | |
| Worn oil .. .. | 0·698 | 0·917 |
| Fresh oil .. .. | 0·719 | 0·816 |
| Ward: | | |
| Polished .. .. | 0·684 | 1·105 |
| Untreated .. .. | 0·633 | 0·983 |
| Oiled .. .. .. | 0·652 | 0·861 |

* Ratio of force (F) required to move one surface over the other to the total force (W) pressing the two surfaces together. $k = F/W$ where $k$ = coefficient of friction.

## SUMMARY

The effect of spindle oil on wood floors has been tested over a period of months, both in a crowded canteen and in hospital wards. In every case there has been a significant and prolonged reduction (about 80%) in the number of organisms projected into the air by sweeping. This reduction applies both to the common dust saprophytes and to pathogenic streptococci.

The effective period of the oil is shown to increase with each application up to a maximum of about two months, depending on the amount of traffic on the floor. The

cost is low and is more than offset by the saving in floor polishes.

The oil can be applied to all wood floors, provided polish is removed beforehand, and to either glossy or cork-inlaid linoleum. The basis for primary application is 1 gallon per 800–1000 sq. ft. floor space.

Attention is drawn to the number of pathogens which may accumulate in ward dust, and it is suggested that the use of spindle oil on all ward floors would remove much of the danger of infection from this source. Its use in any crowded place, such as air-raid shelters, factories and large stores, would have a similar effect and would result in a general cleansing of the air.

The value of 1/500,000 gentian violet blood-agar as a selective medium for aerial counts is confirmed, and a brief description is given of the slit sampler, a new piece of apparatus for making these counts.

I wish to thank Major-General H. Marrian Perry, director of pathology, Army Medical Services, for permission to carry out this work; Colonel E. B. Marsh for his help; the workers at the National Institute for Medical Research, especially Dr. C. H. Andrewes, Dr. R. B. Bourdillon, Dr. M. van den Ende and Mr. O. M. Lidwell, Ph.D., for their coöperation and the loan of apparatus; and my assistants, Sgt. H. G. Stevens and Cpl. T. Bury, for their help in the laboratory.

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# PUNCH PROSTATECTOMY

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THE surgical treatment of bladder-neck obstruction, whether due to adenoma, carcinoma or fibrosis, has given rise to floods of discussion and avalanches of literature. The sole conclusion has been, until recently, one or other form of suprapubic or perineal removal. Any intelligent man, whether lay or medical, who is approaching the prostatic age views the result of all this discussion with horror. Many attempts have been made to sidetrack what is undoubtedly an ordeal for patient and surgeon alike. In 1935 Gershom Thompson and his colleagues at the Mayo Clinic reported a series of 451 consecutive cases without a single death in which prostatic obstruction had been treated by means of the cold punch. The operation is carried out endoscopically, usually without any external incision, and it allows of the patient being out of bed the day after operation. The treatment can almost be described as ambulatory. Confinement to hospital is a matter of days rather than months.

Many of us tried to emulate the example of the Mayo Clinic, but most of us fell short. It seemed then either that Gershom Thompson and his colleagues were reporting too favourably on their cases or that prostatic disease in America was different from that in this country. But on visiting the Mayo Clinic with Mr. T. J. D. Lane, it became clear that the results they were attaining outstripped anything we had seen. This paper is an account of an attempt to follow the example of Thompson, Emmett and their colleagues. We have tried to observe fully the instruction generously given in the Mayo Clinic, and any shortcomings cannot reflect on either the operation or the teaching we received.

## OPERATION AND AFTERCARE

Most of our cases are admitted to hospital either with, or threatened with, acute or chronic retention of urine. On admission a catheter is passed if necessary and, if there is much residual urine, is left in situ. Blood-urea examination is carried out; a blood-urea of 100 mg. per 100 c.cm. or less can be ignored so long as urinary output is satisfactory and the other aspects of the case are favourable. Routine X-ray and physical examinations are made, and in the absence of contra-indications a low spinal anæsthetic is administered and the prostate and bladder are examined endoscopically. Digital rectal examination is often entirely misleading and affords little indication of the degree of obstruction or the amount of prostatic tissue whch must be removed to effect restoration of micturition. Using endoscopy, diagnosis is made on the operating table and treatment is planned accordingly. The Gershom Thompson resectoscope can be used for examination of the bladder, the prostatic urethra and in most cases the ureteric orifices.

It consists of an outer sheath carrying an electric bulb and a diathermy electrode. A fenestrum is cut in this sheath near its distal end and into this prostatic or other tissue can be introduced by manipulation. The inner sheath is removable and ends in a razor-sharp cylindrical knife for the purpose of excising such tissue as is ensnared in the fenestrum. A continuous flow of water passes through the instrument so that the field is constantly clear. Portions of divided prostatic tissue are washed into the bladder, and when the bladder has become distended with water the pieces are released through the instrument during the process of emptying. Cutting is continued until the prostatic capsule is exposed and until there is no longer any prostatic tissue within reach. In the interest of the patient an arbitrary time limit of 45 minutes is applied.

The aim of the operation is to restore function, so that as much of the enlarged prostate is removed as possible. This, in many cases, must amount to about four-fifths; in some as much as 64 g. has been removed at one sitting. During the course of the operation the bladder becomes choked with prostatic tissue and excision must be interrupted in order to suck the pieces out by means of a large syringe. As there is a constant flow of water bleeding points can be identified easily and coagulated by the diathermy electrode. At the end of the operation all small vessels are carefully coagulated; the bleeding being satisfactorily controlled, the instrument is removed and a Foley catheter inserted.

After-treatment is of paramount importance. The bladder and the indwelling catheter must be kept free of clots by repeated irrigation. In some cases this may mean washing every 10–15 minutes. This is continued until the urine becomes clear and no clots are left in the bladder. The nurses who carry out this procedure must be properly trained in it. Asepsis is maintained by using a closed drainage system, the catheter being drained into a bottle which the patient is able to carry about with him. Most patients are out of bed the day after operation and are allowed to walk about the ward or sit in comfortably heated alcoves. Slight rise of temperature after operation is not uncommon but can usually be controlled with sulphonamide. The catheter is removed between the second and fourth day. The patient is then expected to pass water himself. Usually, 6 hours after removing the catheter, he is asked to micturate and the amount of residual urine is checked. If a considerable quantity remains in the bladder the catheter may either be left in for a day or two longer or catheterisation may be repeated every 6 or 12 hours until the residual urine is slight. If at the end of 6 or 7 days voiding is still unsatisfactory more prostatic tissue may have to be removed, but I now rarely find this necessary. Commonly, at the end of a week the patient declares himself satisfied with the ease of micturition and the force and strength of his stream, and it is not unusual for him then to be discharged from hospital. One patient was so satisfied at the end of 4 days that he refused to waste any more time in hospital.

## DANGERS AND DISADVANTAGES

Urethral stricture, incontinence, recurrence of prostatic obstruction and fistula into the rectum are all mentioned as complications of punch prostatectomy. Urethral stricture occurs in one of two situations: in the meatus or at the penoscrotal junction. Meatal strictures are due to the attempts to force a large instrument through a narrow meatus; they are prevented by simple preliminary meatotomy, and their cure is equally simple. Strictures at the penoscrotal junction are due

to the necessary manipulation of a large instrument at a point where the urethra is normally fixed and consequently acts as a fulcrum. It is usually easily dealt with by the passage of a bougie or by internal urethrotomy. This complication occurred in 4 of my series of 230 cases.

The danger of permanent incontinence as the result of punch prostatectomy is negligible. I have twice seen examples: once as the result of my own efforts in the use of a McCarthy resectoscope; and once after suprapubic prostatectomy in another clinic. One case of temporary incontinence is worth mentioning.

A man, aged 56, had retention unrelieved by repeated catheterisation towards the end of an attack of abortus fever. His urine was foul; he had a purulent urethritis and repeated rigors. I removed his prostate by the transurethral route and he left hospital on the fifth day able to empty his bladder, but for something like five months afterwards he was incontinent. Examination by pin-prick showed anæsthesia around the anus, and almost certainly the incontinence was a result of the spinal anæsthetic. He recovered completely.

I have not been doing punch prostatectomy long enough to estimate liability to recurrence of symptoms. At the Mayo Clinic recurrence is estimated at about 3%. It is of little significance, because one can relieve the patient again by operation, and he is again well in a few days instead of a few months. Fistula into the rectum has never occurred among my cases.

## FATALITY

In my 230 cases, all subjected to punch prostatectomy according to the method of Gershom Thompson, 24 died (10·4%). This statement requires amplification. It has been my practice to offer punch prostatectomy to nearly every patient who presented himself with gross signs of bladder-neck obstruction. It appeared to me that the risks attendant on this operation were not much, if at all, greater than those facing a patient subjected merely to suprapubic drainage without subsequent removal of the prostate. Thus my series included many poor surgical risks. I found, too, that increasing experience of the operative technique and organisation of the after-treatment of the patient—both of which take time to acquire and develop—brought a reduction in the fatality.

Of the 24 deaths, 19 occurred in the first 130 patients; these were operated on while the clinic was accommodated in the annexe of a general surgical ward largely concerned with the surgical treatment of bronchiectasis, pulmonary tuberculosis and empyema. Cross-infection of the ordinary surgical type was inevitable, and in addition 3 of my patients succumbed after operation to a *Bacillus aertrycke* infection. The causes of the deaths were as follows:—

| | |
|---|---|
| Pulmonary abscess plus pyuria | 1 |
| *B. aertrycke* infection | 3 |
| Instrumental injury | 2 |
| Cerebral thrombosis | 1 |
| Stokes-Adams syndrome | 1 |
| Carcinoma of prostate (anæsthetic death) | 1 |
| Advanced renal damage | 6 |
| Gross heart failure at time of operation | 3 |
| Repeated strokes | 1 |

The average age of all patients in this group of 130 was 68·3 years and of the fatal cases 71·4 years.

In June, 1939, my clinic was moved to a separate building in which two wards and a new operating theatre had been provided solely for the treatment of these cases. At the same time the organisation of the team of male nurses was completed and I was given the assistance of a surgical registrar, Mr. William Cowell. Among the first 100 patients admitted to the new department and subjected to prostatectomy there were 5 deaths. The average age of this group was 64·9 years and of the five fatal cases 69 years. I have classified these 100 patients as: (*a*) those who were bad operative risks; and (*b*) those who might be reasonably expected to withstand the surgical onslaught of punch prostatectomy. Criteria placing a patient in the first category were cardiovascular disease, hypertension, gross renal insufficiency, obesity and thyrotoxicosis. On this basis 47 patients could be placed in the group of bad operative risks; of these 5 died (10·6%). The average age of the group was 69·4 years and of the fatal cases 69 years. In the second group of 53 (average age 61·6 years) there was no mortality.

I submit that punch prostatectomy abundantly justifies itself on two grounds: first because where the patient is a poor operative risk, the fatality is probably lower than for any other operative procedure which might be attempted upon him; and secondly because where the patient is in reasonable physical condition and suffering only from bladder-neck obstruction, the operation is the safest in the whole range of prostatic surgery. The following cases illustrate the types dealt with.

## ILLUSTRATIVE CASES

CASE 1.—A man of 71. Every attempt at emptying his bladder occupied 10–27 minutes. He had had six previous attacks of angina pectoris; another occurred on the 10th postoperative day. He left hospital on the 12th day and lived in comfort till his next attack of angina carried him off 18 months later.

CASE 2.—A man of 72 with pernicious anæmia. Red cells 2,200,000. Blood-urea 70 mg. per 100 c.cm. Residual urine, 6 pints. One month of catheter drainage while the red-cell count was brought up to 4,300,000. Punch resection: 24 g. of prostate removed. A year later he was fit, enjoying life and carrying out his work as a farmer.

CASE 3.—Aged 75, with a suprapubic tube, cardiac ischæmia and bronchiectasis. Prostatectomy refused on many occasions by far-seeing surgeons. Punch prostatectomy; recovered; now has closed bladder and is enjoying life.

CASE 4.—At the age of 70 this patient had had a suprapubic cystostomy. Prostatectomy refused on grounds of unfitness. At 77 he underwent punch resection with excision of the suprapubic sinus; wound dry and patient emptying bladder in 7 days.

CASE 5.—Toxic goitre with septic urine and stone in the bladder. Punch prostatectomy and stone crushed. Recovered.

CASE 6.—Inoperable carcinoma of the stomach. Retention of urine for 8 days. Punch resection; left hospital on the 8th day.

## DISCUSSION

It will be clear that several of the cases quoted were entirely unfit for any serious operation on account of senility or gross cardiovascular disease, and would never have been fit for suprapubic enucleation. Many patients in the series of 230 had foully infected urine and some had calculi which were crushed and removed at the time of prostatectomy. Another advantage of the punch operation is that patients are encouraged to get out of bed; as Mayo and Gershom Thompson [1] say, old men "are like a foundered horse; if they get down it is difficult to get them up, and their strength ebbs away rapidly." The average postoperative stay of my patients in hospital has been just over 12 days; this figure includes long-stay patients who have been detained for social reasons.

Punch resection is an operation carried out on the best surgical principles: it is done under direct vision with the operative field constantly in view; incision is by means of a sharp knife and bleeding points are seen and arrested. All this sounds simple, but the operative technique is difficult to acquire; in Gershom Thompson's opinion, to put a resectoscope into the hands of a man who is not prepared to study its use is like giving a submachine gun to a small boy who has been reading "Deadwood Dick." Success demands a team and a carefully trained team, and to embark on the operation without such skilled aid is to court disaster. But, putting surgical considerations aside, the operation has long been demanded by the patient in America and is now rightly being demanded in this country.

## SUMMARY

Punch prostatectomy is the operation of choice for bladder-neck obstruction, whether due to cancer, prostatic hypertrophy or median bar. It is carried out by an instrument introduced into the urethra and almost invariably without any external incision.

1. Mayo, C. H. and Thompson, A. *Coll. Pap. Mayo Clin.* 1935, **27**, 251.

The period of confinement to bed is 1–2 days and the average duration of stay in hospital about 12 days.

The operation can be used on patients who are bad surgical risks and is not contra-indicated by the presence of calculi or infected urine.

The safety of the operation excels that of any other method of surgical treatment available.

## CALCIUM AND PHOSPHORUS STUDIES IN THYROTOXICOSIS AND AFTER SUBTOTAL THYROIDECTOMY*

J. DOUGLAS ROBERTSON, M.D., D.Sc. St. And., D.P.H.

IT is now well established that in thyrotoxicosis there is a disturbance of the mineral metabolism of the body, producing an increased excretion of calcium and phosphorus. The evidence for demineralisation was based on an osteoporosis of the skeleton demonstrated radiologically and at autopsy, and on calcium-balance studies where the output of calcium far exceeded the intake. The literature has been reviewed by Aub and his collaborators (Aub, Bauer, Heath and Ropes 1929), and more recently by Beaumont, Dodds and Robertson (1940). Although many serum-calcium determinations have been carried out, the results produced little evidence to suggest that much decalcification was taking place. There is no unanimity about the level of serum calcium in thyrotoxicosis, whether it is raised, lowered or normal. Aub and others (1929), Hunter (1930) and McCullagh (1928) stated that the serum calcium was normal, Leicher (1923) and Wade (1929) found it low, the latter maintaining that the hypocalcæmia varied directly with the degree of toxicity of the case, while Montanari (1928) and Means (1937) noted an elevation. Observations on the effect of subtotal thyroidectomy on the serum calcium again by no means agree, various authors finding postoperatively a rise, a fall or no change. Aub and others (1929) stated that the serum inorganic phosphorus is within the accepted normal limits in thyrotoxicosis.

In the present inquiry, a series of 14 cases of thyrotoxicosis were studied before iodine or other treatment had been given and again after subtotal thyroidectomy. By this means each case studied would act as its own control. The serum calcium and inorganic phosphorus were estimated in each case.

*Results.*—Table I gives the findings before and after operation, with the basal metabolism and calcium excretion. In table II the results are summarised and compared with those of the 60 normal controls discussed in the first paper in this series.[1] It will be seen that the mean serum calcium and mean inorganic phosphorus in the untreated stage of thyrotoxicosis are lower than the normal means, and that after subtotal thyroidectomy the respective means rise and approach normal. Calculated according to Fisher's P test (1938) the difference between the serum calciums before and after subtotal thyroidectomy is significant ($P < 0.01$). The difference before and after subtotal thyroidectomy is also significant in the case of the inorganic phosphorus ($P < 0.01$). If now a comparison is made between the postoperative results in the thyrotoxic patients and in the normal controls, by applying Fisher's P test it is found that there is no significant difference in the serum calciums ($P > 0.2$) or in the inorganic phosphorus ($P > 0.3$).

TABLE I—SERUM CALCIUM AND INORGANIC PHOSPHORUS OF PATIENTS IN THE UNTREATED STAGE OF THYROTOXICOSIS AND THREE MONTHS OR MORE AFTER SUBTOTAL THYROIDECTOMY

| Case | Before iodine and operation | | | | After operation | | | |
|---|---|---|---|---|---|---|---|---|
| | Serum calcium | Serum inorganic phosphorus | Basal metabolism* | Total calcium output† | Serum calcium | Serum inorganic phosphorus | Basal metabolism* | Total calcium output† |
| | mg./100 c.cm. | | | mg./kg. body-wt. | mg./100 c.cm. | | | mg./kg. body-wt. |
| ED | 9·6 | 3·2 | + 61 | 19·2 | 10·1 | 3·5 | − 19 | 12·1 |
| EF | 9·8 | 2·8 | + 60 | 46·2 | 10·8 | 3·8 | − 8 | 15·9 |
| EG | 9·1 | 3·3 | + 38 | 29 | 10·1 | 4·7 | + 4 | 14·3 |
| EH | 9·5 | 3·3 | + 36 | 16·3 | 10·5 | 3·7 | − 14 | 19·1 |
| EI | 9·6 | 2·8 | + 29 | 29·1 | 11 | 4 | − 17 | 11·5 |
| EJ | 9·7 | 3·5 | + 28 | 20·1 | 9·8 | 3·9 | − 8 | 13·5 |
| EK | 9·4 | 3·5 | + 21 | 14 | 10·8 | 3·7 | + 3 | 13·8 |
| EL | 10·8 | 3·2 | + 20 | 40·6 | 10·6 | 3·7 | − 4 | 13·3 |
| EM | 10·6 | 3·5 | + 19 | 13·9 | 11·2 | 3·5 | − 4 | 9·9 |
| EN | 9·4 | 3·5 | + 16 | 34·7 | 10·2 | 3·2 | 0 | 16·4 |
| EO | 9·5 | 2 | + 15 | 34 | 11 | 3·5 | − 13 | 7·9 |
| EP | 9·2 | 3·2 | + 14 | 21·6 | 10·9 | 4 | − 10 | 4 |
| EQ | 9·9 | 3·5 | + 7 | 23·5 | 10·4 | 3·9 | − 6 | 18·7 |
| ER | 9·9 | 3·1 | + 6 | 11·9 | 9·9 | 3·3 | − 7 | 10·7 |
| Mean | 9·71 | 3·17 | + 26 | 25·3 | 10·52 | 3·74 | − 7 | 12·9 |

* Aub-DuBois standards. † In urine and fæces.

TABLE II—FINDINGS IN TABLE I COMPARED WITH THOSE IN 60 CONTROLS

| — | No. of cases | Serum calcium | | | Serum inorganic phosphorus | | |
|---|---|---|---|---|---|---|---|
| | | Mean (mg./100 c.cm.) | Standard deviation | Range (mg./100 c.cm.) | Mean (mg./100 c.cm.) | Standard deviation | Range (mg./100 c.cm.) |
| Untreated thyrotoxicosis | 14 | 9·71 | 0·46 | 9·1–10·8 | 3·17 | 0·44 | 2–3·5 |
| After subtotal thyroidectomy | 14 | 10·52 | 0·45 | 9·8–11·2 | 3·74 | 0·37 | 3·2–4·7 |
| Normal controls .. | 60 | 10·39 | 0·27 | 9·9–11·1 | 3·83 | 0·39 | 3·1–4·8 |

### DISCUSSION

In studying the serum calcium and inorganic phosphorus in thyrotoxicosis and their respective variations after subtotal thyroidectomy, the relationship and control of the parathyroid glands must not be overlooked. The proximity of the parathyroid glands to the thyroid renders their inadvertent removal a possibility, and it is well known that such a procedure leads to tetany and a fall in the serum calcium. It is conceivable that milder forms of parathyroid disturbance may occur, causing a slight fall in the serum calcium but without even minor clinical symptoms of tetany. The findings in such a case were as follows:—

| | Serum calcium (mg./100 c.cm.) |
|---|---|
| Untreated thyrotoxicosis .. .. .. | 9·4 |
| 1 week after subtotal thyroidectomy .. | 8·7 |
| 3 months after operation .. .. .. | 10·2 |

Likely causes of this fall in serum calcium soon after operation unaccompanied by the clinical manifestations of tetany are: trauma to the parathyroid glands through manipulation during the operation; and disturbance in the blood-supply to the parathyroid glands from œdema, blood-clot, or infection. In order to avoid any such immediate postoperative disturbance in the serum calcium, the cases reported in table I had their postoperative blood analyses done several months after the thyroid was removed. It is possible that the conflicting results of various workers on the behaviour of the serum calcium after subtotal thyroidectomy may be explained by the phenomenon described above.

A statistical analysis of the blood-serum determinations in untreated thyrotoxicosis appear to leave no doubt that the serum calcium and inorganic phosphorus are diminished and that successful subtotal thyroidectomy in the absence of any parathyroid disturbance brings these blood constituents back to within normal limits. In the present series no relationship was found between the depression of the serum calcium and the severity of the thyrotoxicosis such as was reported by Wade (1929).

Competent authorities are agreed that to promote health and to allow for ideal calcium retention an average of 1 g. of that mineral should be taken every day, and that this amount should be increased to 1·5–2 g. in pregnancy and lactation. In thyrotoxicosis there is an

* This is the second paper in a series of four. For references and methods of estimation see the first paper, *Lancet*, July 26, 1941, p. 97.

1. *Lancet*, July 26, 1941, p. 97.

excretion of calcium far above normal. It seems reasonable to include as part of the treatment of this disease the administration of calcium in sufficient doses to raise the intake well above the normal optimum of 1 g. daily, and to exceed 2 g. daily when thyrotoxic patients become pregnant.

SUMMARY

There are hypocalcæmia and hypophosphatæmia in active untreated thyrotoxicosis.

In the absence of any impairment of the parathyroids, successful subtotal thyroidectomy brings about a rise in the serum calcium and inorganic phosphorus to the normal level.

A temporary fall in the serum calcium may take place after subtotal thyroidectomy without clinical manifestations of tetany. This is probably due to trauma to the parathyroids or to a disturbance in their blood-supply from œdema, blood-clot or infection.

The heavy calcium loss in thyrotoxicosis suggests that a higher intake than the normal optimum of 1 g. daily should be taken in that condition.

## THE TREATMENT OF SUPERFICIAL GRANULATING SURFACES

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IN treating injuries, especially burns, one often has to deal with extensive granulating surfaces, which are as a rule infected. Dressings are painful and trying to the patient, especially when they have to be changed frequently. In this condition I have used this modification of the Carrel-Dakin method with success.

Two thin pads of gauze (A—B) are required, about six layers thick, and some small rubber tubing (C), tied up at one end and perforated for a few inches with small holes made by a strap punch—the ordinary Carrel-Dakin tube in fact. These tubes are laid on one of the gauze pads as in fig. 1, so as

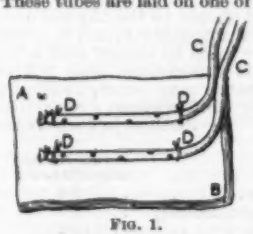


FIG. 1.

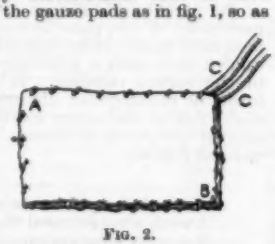


FIG. 2.

to divide the surface of the pad into approximately equal parts. Each is fastened in place by two sutures (D). The other pad is then laid over the tubes and the two pads are tacked together round the edge, allowing the tubes to project at one corner as in fig. 2. The pad is then sterilised.

In applying these pads, the wound is first covered with a layer of "tulle gras" or coarse muslin, impregnated with Vaseline, using enough to prevent it from sticking to the wound surface and yet to leave the meshwork of the gauze patent. The pad is then soaked in 1% chloramine, the excess fluid being lightly expressed and laid on the vaseline gauze. Over this a piece of jaconet or rubber sheeting is laid. The dressing is completed by a layer of wool especially arranged round the jaconet, and a bandage, through which the tubes project.

The gauze is then kept moist and supplied with fresh antiseptic fluid by injecting the solution down the tubes—e.g., 1 oz. every six hours. The quantity and the time will of course vary with the case. This process entails no manipulation of the part and if the solution is warm is usually quite painless, and nothing more need be done for several days. Usually the pads want changing every three days, and it is not harmful to a patient to give gas at that interval, should the dressing be painful. The surgeon may elect to change the gauze pad and leave the vaseline gauze unchanged.

Under this dressing the wound granulates readily, and the spread of epithelium from its edges proceeds without hindrance. Skin grafts take well under it, and it is quite feasible to leave the whole in position to allow the grafts to "take." Partial island grafts adhere quite well and extend rapidly. The pads can be of any size or shape with any number of tubes. They can be prepared beforehand so that the dressing is very rapid.

## Reviews of Books

### Bacillary and Rickettsial Infections

*Acute and Chronic.* By WILLIAM H. HOLMES, professor of medicine, Northwestern University, Chicago. London: Macmillan and Co. Pp. 676. 25*s*.

AFTER twenty-seven years of teaching medicine, Professor Holmes felt a not unusual dissatisfaction with the conventional textbook of medicine, in which the accumulated facts are set out in a stereotyped and didactic manner. He was convinced that the only satisfying method of teaching is to show how medicine slowly evolved and thus to learn to understand the relationship of medicine to the growth of civilisation. It would thus be seen that there are few medical "discoveries": our present knowledge represents the cumulative experiences of many generations of priests, physicians, physicists and philosophers, and the painstaking study and observation of many centuries. In pursuance of his object Professor Holmes wrote not another introduction to the history of medicine but a true textbook of medicine, dealing in particular with rickettsial infections and bacterial diseases. The historical method has been followed throughout—plague, tularæmia, brucella infections, cholera, typhoid, dysentery, diphtheria, botulism, tetanus, gas gangrene, whooping-cough, hæmophilus infections and mycobacterial diseases are all considered from their first recognition down to their investigation as recently as 1938. Professor Holmes had a fascinating style and there are few so erudite that they will not learn from this remarkable book. News has just reached this country of his death two months ago; if he had lived, he might usefully have applied the same technique to the streptococci, gonococci, and pneumococci, the spirochætes, pathogenic worms, protozoa and viruses.

### Early Treatment of War Wounds

By WILLIAM ANDERSON, M.B. Aberd., F.R.C.S., surgeon and lecturer in surgery, Aberdeen Royal Infirmary; surgical director, E.M.S. Northern and North-Eastern Districts. London: Humphrey Milford, Oxford University Press. Pp. 96. 5*s*.

THIS little book is mainly an account of experience gained in the last war. It is too short to be more than an outline, but it contains many practical hints which should be helpful to surgeons inexperienced in the management of wounds under war conditions. The instructions given are clear and precise without being unduly dogmatic, and the author obviously has a balanced outlook. There are some trivial errors, however, and a few more serious ones. The two most important advances in the treatment of wounds—the use of the sulphonamide drugs and the closed-plaster method—are only mentioned briefly. The right technique must be observed if these methods are to be used successfully and safely, and some account of it should be included in any up-to-date book on the treatment of wounds. A third of the book is mainly concerned with military organisation and first aid, and will be chiefly interesting to those who are serving in the Army. An important place is rightly given to delayed primary suture, but it is odd to find Trueta's name associated with the recommendation for primary suture when he has written that "it is only in very exceptional cases that the wound of a gun-shot fracture can be sutured" ("Treatment of war wounds and fractures," p. 26). The chapters on wounds of the abdomen and chest are excellent, and in spite of the rather scant presentation of recent advances this should prove a useful book.

The Index and title-page to Vol. I, 1941, which was completed with the issue of June 28, will be ready shortly. A copy will be sent gratis to subscribers on receipt of a post card addressed to the Manager of THE LANCET, 7, Adam Street, Adelphi, W.C.2. Subscribers who have not already indicated their desire to receive indexes regularly as published should do so now.

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| C | **CELIN** | Pure vitamin C (ascorbic acid) in stable solution for injection, and in tablets for oral use. For treatment of scurvy and latent scurvy. Indicated in febrile diseases, haemorrhagic disorders, delayed healing, and as an anti-scorbutic supplement during illness. | *Tablet,* 50 mg. *Ampoule,* 1 cc., 100 mg. | *Tablets, bottles of* 25, 100 *and* 1,000. *Ampoules, boxes of* 6 × 1 cc., 12 × 1 cc. *and* 50 × 1 cc. |
| | *Infant* **CELIN** | For infants. Each tablet approximates the vitamin C of 2 teaspoonfuls orange juice. | *Tablet,* 5 mg. ascorbic acid. | *Bottles of* 50 *and* 1,000. |
| D | **OSTELIN** | Pure vitamin D (calciferol) in glycerin. Miscible with water. Specific in the treatment of rickets and indicated in delayed skeletal and dental development. Prescribed with calcium mixtures to ensure their assimilation. | *Tablet,* 500 i.u. *Liquid* 1 cc. 5,000 i.u. | *Tablets, bottles of* 45, 250, 500 *and* 1,000. *Liquid* ½ oz. *phials, and bottles of* 2 oz., 4 oz. *and* 8 oz. |
| | **High Potency Ostelin** | For oral treatment when exceptionally large dosage of vitamin D is required — as in parathyroid tetany, chronic arthritis, etc. | *Tablet,* 50,000 i.u. | *Tablets, bottles of* 25 *and* 100 |
| E | **VITEOLIN** | A standardised and concentrated preparation of vitamin E for treatment of habitual and threatened spontaneous abortion. Potency is stated in terms of the recently isolated pure substance (tocopherol). | *3 m. capsule contains* 6 mg. *tocopherol.* | *Capsules, boxes of* 25, 100, *and* 500. |
| K | **KAPILON** | Vitamin K analogues for prevention and control of haemorrhage of the newborn and in obstructive jaundice. | *Ampoule,* 1 cc. 5 mg. *Liquid,* 10 mg. per cc. *Tablet,* 10 mg. | *Ampoules, boxes of* 6 × 1 cc. *Liquid,* ½ oz. *phials. Tablets, bottles of* 25 *and* 100. |
| P | **PERMIDIN** Hesperidin *Glaxo* | A flavone compound, associated in nature with vitamin C, playing an important part in the regulation of vascular permeability of the capillary wall. Indicated for treatment of certain disorders involving capillary fragility. | *Tablet,* 150 mg. | *Tablets, bottles of* 50. |
| A and D | **ADEXOLIN** | Concentrated vitamins A and D in balanced ratio. Prescribed as a protective tonic, and as an ante-natal routine. | *Capsule,* 6,000 i.u. A, 1,000 ,, D. *Liquid* 1 cc., 12,000 i.u. A, 2,000 ,, D. | *Capsules, tins of* 25, 100, 500 *and* 1,000. *Liquid,* ½ oz. *phials, and bottles of* 2 oz., 4 oz. *and* 8 oz. |
| | **Dekadexolin** | Vitamins A and D in exceptional concentration, for injection where massive dosage is indicated. | *Ampoule,* 1 cc., 60,000 i.u. A, 10,000 i.u. D. | *Ampoules, boxes of* 6 × 1 cc., 12 × 1 cc., *and* 50 × 1 cc. |

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# THE LANCET

*LONDON: SATURDAY, AUGUST 2, 1941*


## SINGLE AVITAMINOSES FROM MULTIPLE DEFICIENCIES

WE are accustomed to look upon a deficiency disease as a single entity, produced by lack of one essential food factor. The nutrition worker, studying the vitamins in the laboratory, tries by limiting his variables to avoid complicating his results, and his animals most often receive diets as complete as possible except for the one factor being investigated. The clinician, too, expects to find his examples of deficiency disease clearly partitioned off as scurvy, rickets, beriberi or pellagra. But human dietaries are such that if they are short of one factor they are likely to be short of many. The poor person who cannot afford the protective foods, or the person who is compelled by circumstances to live on an over-simplified tinned menu, may be denying himself most of the known vitamins, let alone the unknown ones. Moreover certain vitamins have a common distribution, so that a diet composed to a large extent of white bread, for example, will be lacking in most of the vitamins of the B group, and one with no fruit or vegetables will be lacking in C, H and P. Thus multiple shortcomings in the diet are not uncommon and it might be expected that these cases would present the classical signs of more than one deficiency disease. But in practice patients showing such mixed signs are rare.

Professor DAVIDSON in this issue describes three patients in whom a diet apparently lacking in several factors led to manifest scurvy with no obvious signs of other deficiencies. On the other hand, three patients whose intestinal absorption was defective developed quite different syndromes, although there was no obvious difference between their diets. What determined the symptoms in each case? There are no doubt many factors which decide what deficiency state appears first in a patient receiving a diet lacking in more than one component. The most important of these are the relative degree of each deficiency, the time taken for the effects of each avitaminosis to appear, and individual variations. Two diets may seem much alike in their lack of several members of the B group, yet in one a special shortage of nicotinic acid will produce pellagra, while in another the nicotinic acid will be just sufficient but the lack of vitamin $B_1$ will produce beriberi. The time taken for the deficiency diseases to develop varies considerably. This is partly explained by differences in the capacity of the body to store the vitamins, so that deficiencies of the water-soluble vitamins, which are not stored to any large extent, tend to develop more rapidly than deficiencies of the fat-soluble ones. But even among the water-soluble vitamins differences exist in the rate of development of signs of deficiency. Thus if rats are given a synthetic diet lacking all the vitamins they will develop polyneuritis and die. The effects of vitamin-$B_1$ deficiency, in other words, develop so soon that the other deficiencies do not have time to become apparent. We must also bear in mind that people differ widely in their food requirements. Some of the variations in absorption or utilisation are easily recognised and explained. For instance, the absorption of vitamin K depends on an unobstructed flow of bile; the requirement for vitamin $B_1$ depends on the amount of exercise taken and on the amount of carbohydrate in the diet. But in addition, as Professor DAVIDSON points out, there may be individual differences in absorption, synthesis, storage or utilisation which have still to be worked out. Meanwhile, consideration of the relative extent of the deficiencies, and the relative rapidity with which the signs develop will often go a long way towards simplifying a puzzling case.

## THEORY AND PRACTICE IN CHEST SURGERY

THE high death-rate from penetrating wounds of the chest has always weighed heavily on military surgeons. In a historical survey RANSON [1] showed that during the Crimean War the fatality from this type of injury was 79% in British hospitals; in the American Civil War the rate was 63% and in the Franco-Prussian War the Germans recorded a rate of 57%. During the Boer War the rate in British hospitals was only 14%, the low figure being attributed to good climatic conditions and the predominance of bullet wounds. During the last war the British fatality has been given as 27·5%, and in a French unit DUVAL [2] showed that improved methods of treatment reduced the figure of 70% in 1914–15 to 25–30% towards the end of the war.

The Finnish campaign gave Soviet surgeons an opportunity of collecting fresh figures. At a special unit in a base hospital MATSYEV and LINBERG have recorded the results of their experiences with hæmothorax and thoracic injuries respectively. MATSYEV [3] analysed 184 cases of hæmothorax and found that 96 of them were closed and 88 associated with a definite pneumothorax. Dyspnœa was generally present and was attributed mainly to the pressure of the enclosed fluid and air which displaced the mediastinum in addition to causing collapse of the lung. Some rise of temperature was present in nearly every case, even in those with no evidence of infection; in fact, only 10% were admitted to the unit with normal temperatures. Severe pain, when present, was referred to the costal margin in a fifth of the cases, and in 2 cases the pain of a gastric perforation was closely simulated. On radiological examination, the heart was seen to be displaced in 43·5% of the patients and this was held to be responsible for the acute distress often noted. Hæmoptysis was common (75% of cases) and subcutaneous emphysema was present in 28·5% of the total. Early and repeated aspiration was adopted as the routine treatment for hæmothorax, and this, besides relieving pressure symptoms, reduced the risk of secondary infection. The complication of recurring hæmorrhage as the result of early aspiration was never encountered. The most satisfactory time for the aspiration was found to be from the third to the fifth day after injury and 500–1000 c.cm. of blood was withdrawn at a sitting. In just over half the cases a single needling was held to be adequate and attention is drawn to the fact that the blood is usually easily

1. Ranson, F. T. *J. thorac. Surg.* 1940, **9**, 278.
2. Duval, P. War Wounds of the Lung, Bristol, 1918.
3. Matsyev, I. E. *Surgery (U.S.S.R.)* 1940, **9**, 106.

removed, and does not clot on standing. Another interesting feature, which has recently been emphasised by SELLORS,[4] was that the aspirated blood had a lower red-cell count and hæmoglobin percentage than the circulating blood. It is noteworthy that secondary infection only occurred in 2% of the cases of closed hæmothorax though the proportion rose to 16% when there had been an open hæmopneumothorax. In any case these figures compare favourably with those of ROSE BRADFORD and ELLIOTT,[5] who found infection in 25% of 450 cases of hæmothoraxes treated during the last war. Pneumonia occurred in 17 patients in the Russian series but there was only one lung abscess. Secondary breaking down of a chest-wall wound with formation of an open pneumothorax and empyema was observed in 5 cases and is rightly regarded as a very grave complication.

In another paper on the Russian experience in Finland LINBERG[6] reviews 972 chest injuries, of which 83% involved the thoracic cavity. Only 29 (3%) of these died, and among them were 12 men who had severe wounds elsewhere. He suggests that the organisation and standardised treatment had much to do with the good figures obtained. Admittedly the patients who reached the special chest unit were only the survivors from a much larger group of casualties, but the opportunity to bring some two-thirds of the patients direct from the front-line posts by aeroplane was no doubt valuable. Air-transport was found to be superior to motor transport in every way when it was practicable. Other factors believed to contribute to the good results were the sound general condition and physique of the soldiers and the fact that most of the injuries were caused by bullet wounds rather than by shell or bomb fragments. LINBERG emphasises the importance of establishing special units for the treatment of chest cases and holds that good results cannot be expected when chest casualties are distributed among the rest of the wounded. He insists that conservative treatment of hæmothorax has no justification, and in this his view corresponds closely with practice in this country. Blood should not be left in the pleural cavity merely because it is causing no symptoms: it will ultimately produce severe respiratory disability; and aspiration should never be withheld on account of the fictitious danger of recurrent hæmorrhage. Where there is a "sucking" or open wound the muscle and deep layers should be closed, though the skin wound may be left open. If the skin is tightly sutured, emphysema and later infection of the chest-wall planes and pleura is a dangerous complication. Experimental work on animals by VERHOVITCH and IGNATSOVSKAYA[7] showed that the most satisfactory way of treating an open chest wound was to repair the deeper layers of the chest wall and drain the pleural cavity by a valvular rubber tube. In some cases, as a life-saving measure, they advocate early pneumopexy to minimise the harmful effects of a free and open pleural cavity. Their experiments were used as the basis of treatment in LINBERG's unit, with good results. Foreign bodies lodged in the chest should be removed as soon as possible and at the same operation wounds in the lung or adjacent viscera can also be dealt with.

These Russian papers illustrate the pitch of efficiency which can be attained in a base hospital unit specialising in the treatment of chest injuries, so long as the first-aid and preliminary treatment are adequate and the patients are transported from the front line with the least possible delay.

## DIAGNOSIS OF CRETINISM

THERE is a tendency these days to give thyroid extract hopefully to almost every retarded child when the backwardness is physical, mental or both. What WILKINS and FLEISCHMANN[1] of Baltimore call "lack of critical analysis and an excess of enthusiasm" applied to cases of dwarfism is doubly unfortunate because it obstructs advances in treatment and may raise false hopes in the parents of a mentally defective child. The list of modern methods for the diagnosis of hypothyroidism as set out by WILKINS and FLEISCHMANN appears formidable, but the "classical" cretin is usually easily recognised at a glance after a little experience. The clinical features of hypothyroidism arising during the period of growth fall into two groups: alterations in bodily structure and alterations in functional activity. The stunting in growth is well known and hypothyroidism accounted for about 25% of dwarfs in the Baltimore series after diseases of bone and cardiac, renal, intestinal, hepatic and metabolic disorders had been excluded. Not only is growth delayed, but the child remains relatively top-heavy, retaining the infant's characteristic disproportionate length from symphysis pubis upwards. The naso-orbital configuration also tends to remain infantile, playing an important part in determining the facies of the cretin. Retardation of osseous development is an important factor in the anatomical abnormalities of the hypothyroid child, but such osseous changes are unfortunately not confined to dwarfs of thyroid origin, although treatment with thyroid will only produce a prompt effect in them. Dental development is similarly affected, but according to WILKINS and FLEISCHMANN a form of epiphyseal dysgenesis is probably the most specific of all the anatomical changes due to hypothyroidism; calcification in the epiphyseal cartilage appears in multiple small irregular foci, eventually coalescing into a single irregular centre. They conclude that whereas structural changes are of great diagnostic value in most cases there is a theoretical possibility that a mild degree of thyroid deficiency may exist throughout childhood without producing any characteristic ones, so that functional activities must be studied as well.

Mental sluggishness and physical inactivity are present in all cases in some degree and some improvement follows thyroid medication. Cardiac output and circulatory rate are constantly diminished, but are difficult to measure. The most valuable laboratory tests seem to be those concerned with basal metabolic rate, serum-cholesterol and urinary excretion of creatine. Lately TOBIAS and STOCKFORD[2] of Los Angeles have been seeking for the best measure of what they term the "metabolic speed" of children and have carried out a survey of carpal development, basal metabolic rate and serum-cholesterol in 216

4. Sellors, T. H. *Brit. med. J.* 1941, **1**, 825.
5. Bradford, J. R. and Elliott, T. R. *Brit. J. Surg.* 1915–16, **3**, 247.
6. Linberg, B. E. *Surgery (U.S.S.R.)* 1940, **9**, 97.
7. Verhovitch, F. P. and Ignatsovskaya, N. N. *Ibid*, p. 10.

1. Wilkins, L. and Fleischmann, W. *J. Amer. med. Ass.* May 31, 1941, p. 2459.
2. Tobias, W. and Stockford, L. *Amer. J. Dis. Child.* April, 1941, p. 675.

children selected at random. From a statistical analysis they find that the level of serum-cholesterol is the simplest and most satisfactory measurement of metabolic activity. This is essentially confirmed in relation to the diagnosis of hypothyroidism by WILKINS and FLEISCHMANN. Not only is the estimation of the basal metabolic rate difficult in the young child of subnormal mentality but there are certain fallacies in the test when applied, for example, to obese children whose body-surface area upsets the normal standards. The serum-cholesterol level offers a surer guide, for in most children with hypothyroidism it lies between 250 and 600 mg. per 100 c.cm. compared with a range of 100–300 mg. in normal children. If other causes of hypercholesterolæmia, such as diabetes, nephrosis or hepatic disease, can be excluded, then a serum-cholesterol level of over 300–325 mg. per 100 c.cm. is very suggestive of hypothyroidism.

The urinary excretion of creatine is low in the hypothyroid child but there are great differences in the excretion of this substance in normal children so that as a biochemical observation in the untreated cretin it has little value. A valuable extension, however, of both the serum-cholesterol test and the urinary creatine estimation is found in the results of giving a single intramuscular dose of thyroxine (2–5 mg.). In the hypothyroid child a noticeable decrease in the serum-cholesterol is produced lasting about 40 days, whereas in the normal there is only a slight and transient fall. Urinary creatine rises after thyroxine in the cretin but here again the normal standards are variable. A still further extension can be made by the use of the thyrotropic hormone of the pituitary. Here the average daily output of creatine in the urine is studied for a control period of 1–2 weeks. Thyrotropic hormone in doses of 5–10 units per kg. of body-weight is then injected daily for about 10 days, and the daily excretion of creatine measured. The hormone is then omitted until the excretion of creatine returns to the base level and finally the effect of thyroid or thyroxin on this level is measured. In a child with hypothyroidism, thyrotropic hormone produces no change in creatine excretion or cholesterol level, presumably because the child has no thyroid tissue capable of stimulation, whereas thyroid raises urinary creatine and lowers serum-cholesterol. In one type of control in the Baltimore series both thyrotropic hormone and desiccated thyroid produced changes in creatine and cholesterol levels ("positive"); in another neither had any effect ("false negative"). A false negative response was found in certain normal children and dwarfs with normal thyroid function, though most of the latter gave a positive response. It is clear that biochemistry offers valuable aid in the diagnosis of the cretin and should be more widely used to prevent mistakes. There is one other line of inquiry which WILKINS and FLEISCHMANN do not mention—study of the anæmia of hypothyroidism and the possibility of a positive reticulocyte response when thyroid is administered to the cretin but not to other anæmic, retarded children. This might prove simpler than the thyrotropic-hormone-creatine method although not as simple as study of the cholesterol level, itself in many cases quite sufficient to confirm the clinical evidence.

## SANDFLY FEVER

THOSE who fought in the Middle East in the last war will not need to be reminded of the military importance of that comparatively trivial disease, phlebotomus or sandfly fever. This acute infection, due to a filtrable virus, is conveyed from man to man by the *Phlebotomus papatasii* and possibly other species of a genus which has a bad record for transmitting disease: kala-azar in India, oroya fever in Peru. Sandfly fever may occur wherever the vectors exist, and in the present field of military operations is common on the Mediterranean littoral, in Syria, Palestine, Trans-Jordania, Egypt, Iraq and India. Outbreaks seem to appear in two annual waves, in the late spring and the autumn. Over 70% of non-immune people—and this includes most Europeans—get the disease on their first exposure to infection, about 15% of these have a second attack, and some have a third or fourth. The severity of the attacks steadily diminishes after the first, and the later ones may not be diagnosable clinically. By early and repeated exposures to the disease the indigenous population acquires a substantial immunity to it, and children suffer less from an attack than adults.

Among non-immune Australian troops, concentrated in Southern Palestine during 1940, WALKER and DODS[1] saw many cases; in addition to those reporting sick and entering hospital there were many who were not prevented from carrying on their work. In the First Australian General Hospital some 1500 cases were seen between May and November, 1940, most of these coming in July, August and September. Two types of cases were noted: those in which the onset was sudden without obvious prodromata, and those with prodromal symptoms lasting 24–48 hours. In both types the onset was associated with mild shivering, but rigors were unusual. The temperature rose abruptly to about 102·5° F. in the average case and remained up for more than three days. In some cases after several days without fever there was a secondary rise of temperature with a recrudescence of symptoms lasting a day or two. The physical signs include a pathognomonic facies. The face is puffy and swollen and the complexion red and suffused. Conjunctival congestion is common and hence the popular names "pink-eye" or "dog disease" (*Hundfieber*). The eyeballs are tender to pressure and on movement, and are therefore kept still. Frontal headache and pain in the eyes and leg muscles are so severe that sleep is impossible. The tongue is furred, and in the cases reported by WALKER and DODS a striking and constant feature was the early appearance of a crop of vesicles on the soft palate, extending to the faucial pillars on each side. These vesicles are devoid of any surrounding mucosal inflammatory reaction, and cannot be regarded as peculiar to sandfly fever, for they may be seen in other virus diseases and were noted in cases of infective hepatitis in Palestine. In contradistinction to dengue, where an eruption comes out during the usual secondary rise of temperature, no true morbilliform rashes were seen among the Palestine cases of phlebotomus fever. A relative bradycardia was almost invariable after the first day, and an absolute bradycardia was often a striking feature towards the

1. Walker, A. S. and Dods, L. *Med. J. Aust.* 1941, **1**, 345.

end of the fever, when the pulse-rate fell to 60 a minute or less. WALKER and DODS were unable to study the blood-picture adequately, but leucopenia affecting the granular leucocytes only is a typical finding for the first four or five days, and this is followed, it is said, by a leucocytosis up to 15,000 or 20,000 per c.mm. about the tenth day of the disease. Treatment is purely palliative, but sedatives relieve the symptoms to some extent. The mortality is negligible.

The importance of this malady (apart from its unpleasantness to the sufferer) lies in its tendency to arise epidemically, for outbreaks may make it difficult to keep a non-immune force active in the field during the epidemic season. Prophylaxis is difficult on account of the very small size, the breeding habits and the voracity of the sandfly vector. The breeding grounds of the insects are rubble, dug-outs, cracks in walls and embankments, and sun cracks in the ground. The larvæ penetrate to a depth of a foot or more in loose, slightly moist soil, and the insect hibernates in the larval stage, emerging in the spring. The female alone bites, usually after dark, and its powers of flight are limited. The erection of parapets, the excavation of tent and hutment floors, and similar earthworks necessary in the field of military activity may facilitate the breeding of the flies. Where cracks can be levelled or filled in, especially with tar, the insects can be discouraged from breeding. Blackout conditions increase the liability to be bitten, because men prefer to sit outside, on or near the ground, where the flies await them, rather than in dark tents or huts. The ordinary mesh mosquito net is useless against these tiny aerial invaders and suitable nets of muslin, or of particularly fine mesh, although efficient in excluding them from a sleeper, feel close and stuffy in a hot climate. Their use should, however, be insisted on whenever practicable. The use of a pyrethrum insecticidal spray inside huts and tents daily, before sweeping the floors, will reduce the sandflies, mosquitoes and house flies in such places, and an electric fan where available will provide currents of air sufficient to carry the sandflies away. If huts and similar dwellings can be built on piles well off the ground they will be comparatively immune from invasion by sandflies. No drug, serum or vaccine therapy is available for immunisation against the disease, and the best precautionary measure against undue morbidity in endemic areas is to employ on active operations troops "salted" by previous infection.

## Annotations

### THE CAPITATION FEE

WHEN introducing on July 15 the second reading of the bill with a long name the Secretary of State for Scotland said that the question of the doctor's capitation fee was still under consideration. Actually, as Dr. Anderson told the Insurance Acts Committee on July 10, the Minister of Health had already agreed to increase the capitation fee from 9*s.* to 9*s.* 9*d.* and there is to be no further advance on this offer. At the beginning of 1942 provision will be made for finding 20*s.* a year as a fixed charge for each insured person: 14*s.* 6*d.* of this will be paid into the medical pool, out of which it is estimated administration will draw 10*d.*, drugs 3*s.* 7*d.*, mileage 4½*d.*, the remainder with luck being very nearly if not quite 9*s.* 9*d.* Of the additional 9*d.* the larger part (5½*d.*) is intended to cover the increased expenses of practice. The 3½*d.* is added, apparently, to compensate the doctor for the transfer of the new higher-income group (£250–£420) from his private to his insured practice. Dr. Anderson calculated that an extra 3½*d.* all round will bring in something like 11*s.* 6*d.* per head of these new entrants. The doctor can thus pretend that he is getting a guinea for each of them, and if he lives in a Utopia where there are 40 previously insured persons to each new entrant he may even be right. Admittedly the 9*d.* increment to the capitation fee has been arrived at without reference to enhanced cost of living and the Minister has given an undertaking that the basic fee will be reassessed immediately after the war.

### INTRAVENOUS OXYGEN

A CORRESPONDENT asks why more use is not made of intravenous oxygen in the treatment of shock, and points out that the method has been proved practicable. During the last war Tunnicliffe and Stebbing[1] worked out such a method with a view to applying it to the treatment of acute cyanosis caused by mustard gas and other respiratory irritants. Using simple apparatus they experienced no difficulty in introducing oxygen into a vein at the rate of 600–1200 c.cm. an hour, and in cases of chronic cyanosis arising from malignant disease of the mediastinum, pernicious anæmia and so on they found that this improved the patient's colour and relieved his dyspnœa. In only one case—their first—was any complication encountered; here an old man became temporarily unconscious during the administration, with extensor plantar reflexes, but he soon recovered and was none the worse. The only disadvantage appeared to be that the method required the whole-time attention of the administrator, and as it is now generally agreed that oxygen should be given continuously this is a serious drawback. The method has since been little used, though it was revived a year ago by Singh and Shah,[2] who found that amounts up to 10 c.cm. a minute could be safely injected from a cylinder, or double this amount if chemically pure oxygen was used, representing some 10% of the patient's requirement. They gave up to 350 c.cm. to six patients with pneumonia and satisfied themselves that there was clinical improvement. They mention that oxygen embolism, unless carried to extremes, is not dangerous. There is, then, no doubt that intravenous oxygen is practicable and reasonably safe. On the other hand, its use in peace-time would be confined to the patient whose functional lung is much reduced by extensive pneumonia, and such cases are rare. In the treatment of shock without cyanosis it is doubtful whether the method would have any place. Here the blood is fully oxygenated in the lungs, and the tissues are only short of oxygen because their blood-supply is deficient. The inhalation of pure oxygen relieves this shortage slightly by forcing an extra 2–3 c.cm. of oxygen into solution in every 100 c.cm. of plasma. To do this by the intravenous route would mean giving the exact amount necessary to oxygenate the hæmoglobin plus a very little more to saturate the plasma. In other words, the patient would have to be given a little more oxygen than he was consuming, a procedure which would certainly produce embolism. Giving a little less would be safer, but this would only relieve the lungs of their task of oxygenating the hæmoglobin, which they had previously been doing efficiently and without difficulty. When the patient is cyanosed the position is different, for unsaturated hæmoglobin is avid of oxygen, and there seems a possible use for the method in cyanosed patients with severe injuries of the lungs or chest wall. It is in

1. Tunnicliffe, F. W. and Stebbing, G. F. *Lancet*, 1916, **2**, 321.

2. Singh, I. and Shah, M. J. *Ibid*, 1940, **1**, 922.

the gassed case that it might prove most useful, and while there is a chance that the enemy may still resort to gas warfare it would be well to have the technique worked out more fully and its possibilities explored.

## LIBRARIES NOW AND AFTER

AMONG the less spectacular ways in which our American friends are helping us is in solving our library problems. Many American libraries have offered individual help to their opposite numbers over here and the Rockefeller Foundation has been outstandingly generous on a comprehensive scale. Dr. Arundell Esdaile, president of the Library Association, in a letter to the *Times*, has told how the foundation is financing a scheme promoted by the Library of Congress to make microfilm copies of all important manuscripts in this country, beginning with the British Museum and Public Records Office collections. A project of more appeal to our profession is the survey, also financed by the Rockefeller Foundation, which the Association of Special Libraries has undertaken of technical periodicals now reaching this country from abroad, with a view to making those that are received available where they are most needed. Medical libraries have been particularly starved of continental literature. Our largest professional library reports that its intake of world periodicals has been reduced by half. Since the fall of France no medical periodicals have come in from occupied countries and very few from Germany, so that we have had to depend on the few neutral countries to tell us about medical activity and research on the continent during the past year. Letters in the American press show that American libraries are beginning to feel the pinch too. European periodicals are either not being sent to them, except from Britain, or if sent are often lost in passage. And this is no temporary loss, for after the war it will prove impossible to fill these gaps in the libraries. Publishers of scientific journals are printing only for their regular subscribers and there will not be enough copies to go round when the gaps come to be filled. The cheapening of photographic processes at last brings within the range of even a shallow library purse the possibility of filling their gaps with microfilm reproductions. Under the pressure of war, commercial firms have taken up this technique for copying their records on a great scale, and libraries will benefit by the resulting drop in price. Hitherto the lack of a cheap reading-machine, which is now being produced, has made the microfilm an almost useless plaything except for record purposes. Now it may rapidly become the vehicle for a revolution in our library services, making all books available to readers at a distance, as it is already doing through the Surgeon-General's Library in Washington.

London is particularly rich in medical libraries. A correspondence in these columns just before war broke out showed something of the chaotic conditions out of which these libraries were only then feeling their way towards coördination. At the moment they are scattered in varying degrees of inaccessibility. The Rockefeller Foundation again has made possible their dispersal from the danger zone of bombed London. The Royal Society of Medicine has evacuated about a third of its great collections within accessible distance of London, thus ensuring a minimum of dislocation but not a maximum of protection. The Royal College of Surgeons, whose buildings have since suffered much damage, took the precaution of sending its library farther afield, where though still in being it is of little use to readers. The Royal College of Physicians has had to store its library beyond access. The London School of Hygiene library, the latest to join the ranks of the evacuees, aims we understand at a middle course of probable safety and limited accessibility. When—in a not too distant future, we hope—these libraries return intact to London the readjustments which will be necessary will offer a unique opportunity to provide some coördinating mechanism for our wealth of medical literature. Before the war it was scattered in half a dozen libraries, each of which, being a department of a semi-private institution, was necessarily restricted in its scope and in its use by the profession as a whole. Just as the National Central Library acts as a clearing house for the public and academic libraries throughout the country, so the medical profession needs a centre to coördinate its libraries and make them of the fullest use to all medical men. The occasion will be there immediately after the war, and in microfilm we have a new technique to exploit which should simplify the difficulties. We should welcome the coming opportunity and begin to prepare the plans now for a central coöperative service worthy of our great libraries.

## PULMONARY LESIONS IN EXTRATHORACIC TUBERCULOSIS

IN an attempt to discover the frequency with which a pulmonary lesion, mild or latent, is associated with extrathoracic tuberculosis, Vaccarezza and Gómez[1] have studied 420 cases of hæmatogenous tuberculous disease, including tuberculosis of the bones and joints, glands, meninges, genito-urinary organs, eyes, peritoneum and skin. In 90% they were able to demonstrate, clinically or radiologically, the presence of pulmonary tuberculosis. In a large proportion of the cases the pulmonary lesions were active; 36% of the patients presented clinical signs of progressive disease of the lungs. The findings certainly accentuate the importance of complete examination in patients with extrathoracic tuberculosis. These Buenos Aires workers advocate clinical and radiological examination of the chest and examination of the sputum and gastric contents for tubercle bacilli in every case, and they urge that all patients with tuberculous disease of any part of the body should be segregated in special wards in hospitals. While such precautions may be desirable for patients with active disease, it seems unnecessary to adopt them for patients who merely present (as do many healthy people) clinical or radiological signs of old tuberculous lesions of the lung, such as calcified glands at the hilum.

## ISINGLASS AS A BLOOD SUBSTITUTE

WHOLE blood is the only fluid that will adequately replace blood lost through hæmorrhage, but it possesses practical disadvantages in that it cannot be stored indefinitely and the danger of incompatibility can only be removed by routine blood grouping, for which there is often too little time in an emergency. Dried human serum to a great extent meets the requirements of an ideal transfusion fluid, but it is not produced on a sufficiently large scale for universal use and its great value in burns and shock tends to limit its use to these conditions. The ideal would be to store red cells and plasma separately, so that cells only could be used for anæmia, plasma for shock and the mixture for acute hæmorrhage. Various substitutes have been tried. Gelatin solution, which is a colloid, does not easily leave the circulation and has a reasonable viscosity, but it carries the danger of tetanus or anthrax infection, though one would think that this could easily be overcome by using pure bacteriological gelatin. However, gum acacia was substituted, and in spite of good results during the last war it is now out of fashion because it is said to cause liver damage. Crystalloid solutions do not remain for a sufficiently long time in the circulation. Now we have a new blood substitute in isinglass, which is prepared from the swim bladders of fish. Taylor and Waters[2] of Toronto say that it can be made sterile, is non-toxic and is practically non-antigenic. In a 7%

1. Vaccarezza, R. F. and Gómez, J. B. *An. Cáted. Pat. Clín. Tuber.* 1940, **2**, 307.
2. Taylor, N. B. and Waters, E. T. *Canad. med. Ass. J.* 1941, **44**, 547.

solution it has a higher osmotic pressure than plasma and its viscosity though less than that of whole blood is greater than that of plasma, enabling a higher blood-pressure to be attained. Taylor and Waters have recorded favourable results when using isinglass to replace lost blood in dogs and maintain that in many cases the dogs' lives were saved by it. Their solution contains 7% of isinglass, 0·25% of sodium bicarbonate and 0·75% of sodium chloride in distilled water. This is said to be isotonic and has a pH of about 7·2. They are careful to point out that the fate of isinglass in the body is not known though they believe that it may be used by the tissues. If this is the case a valuable substitute for blood will have been discovered. It seems, however, that rather than new substitutes what is required is an efficient manufacturing, distributing and clinical organisation, so that those materials which are already available may be used to better advantage.

## PRESENT POSITION OF VENEREAL DISEASE

THE possibility of an increase of venereal disease in war-time is an inevitable source of anxiety to all who remember the black record of previous wars. No doubt this was in the mind of those who organised the meeting of the Medical Society for the Study of Venereal Diseases on July 26 when Colonel L. W. Harrison utilised his presidential address to consider the present trend of incidence of venereal diseases in England and Wales. No-one is better fitted to review the situation than Colonel Harrison by reason of his length of experience and his breadth of outlook. He struck a reassuring note at the outset by pointing out that since the outbreak of war venereal diseases have not increased to anything like the extent which we feared. As regards syphilis, before the war we had good reason for believing that the great majority of early infections in civilians coming under medical care in this country were being dealt with in the treatment centres. A suspicion that undetected syphilis might be rife in country districts far from treatment facilities had been disproved by the fact that although they had since the war been infiltrated with service personnel, munition workers and evacuees they had not been found hot-beds of venereal disease.

In a comprehensive review Colonel Harrison showed that in 1939 the number of cases of early syphilis dealt with for the first time at the civilian centres in England and Wales was 4986, a decrease of some 45% since 1931 and less than a third of the number in 1920. Collateral evidence of this decline was found in the diminishing rôle of syphilis in killing infants; their death-rate from this cause had fallen from 2·03 per 1000 in 1917 to 0·2 in 1939. As regards service infections, the admission-rate for syphilis in the Navy stationed at home fell from 8·1 per 1000 per annum in 1921 to 1·96 in 1936, the latest year for which published figures are available. In the Army at home the syphilis rate fell from 9·8 per 1000 per annum in 1921 to 0·9 in 1937. In the Air Force during the same period the rate for primary and secondary syphilis fell from 4·1 to 0·5. There are other causes at work in diminishing venereal infection among recruits, but the higher rates in stations abroad suggest that the decline is some index of the improvement in the position at home. Returns from civilian clinics indicated, said Colonel Harrison, that from the outbreak of war up to the end of March, 1940, the fall in the syphilis rate slowed down; during the last twelvemonth there has been a definite increase among both males and females. As a result of all his calculations Colonel Harrison came to the conclusion that male syphilitic infections had increased in England and Wales in 1940 by about 27% and that the total increase in both sexes was about 23%.

Civilian cases of gonorrhœa were fewer but when service cases were added the total males showed an increase of 9–10%. It was, he thought, disturbing to find that the centres had dealt with fewer females in 1940 in spite of the clear evidence of increased incidence in the males. On the other hand, as Colonel Harrison and subsequent speakers recognised, the modern drug treatment of gonorrhœa has made recourse to private practitioners so much more common that clinic statistics for this disease are now a very imperfect indication of incidence and comparisons with previous years are fallacious. Where, he asked, was this increase of venereal disease occurring and is the existing system of treatment centres sufficient? The best information available comes from the lists of places where service men stated they contracted the disease. The overwhelming majority of places where more than 10 infections had occurred were already provided with treatment centres. Nevertheless the details showed that a good deal of sporadic infection was occurring in places out of range of the clinics. And yet in some places where relatively heavy infections of service men had taken place the number of females dealt with had actually declined. From October, 1940, the Ministry of Health had been in a position to refund local authorities three-quarters of the approved cost for new treatment facilities; 16 new centres are being set up as a result of this offer and 14 county authorities are making arrangements with practitioners to treat cases in their own surgeries in areas where the amount of disease does not justify the establishment of a clinic. Colonel Harrison attached considerable importance to this new departure which is to be supervised by the county V.D. consultants; it would go far, he hoped, to solve the problems of rural areas. Later speakers from the services and civilian clinics supported the evidence of slight increase only in venereal diseases except in the ports much frequented by foreign seamen where a substantial rise had been noted locally. In the Army at home the incidence had been curiously uniform week by week, and the total V.D. rate has fallen from 11·3 per 1000 in 1938 to 8·7 per 1000 in 1940 and 8·4 per 1000 in the first five months of 1941. The ratio of gonorrhœa to syphilis has remained remarkably steady at 8 to 1. Everything possible is done to ensure that V.D. is treated as far as possible like any other disease. In the Navy, it was stated, the present return of syphilis is the lowest on record. The R.A.F. can also claim a very low incidence of both diseases, the total ratio being 6·3 per 1000. Two representatives of the medical services of the A.T.S. and W.R.N.S. said that the amount of V.D. among uniformed women was negligible, though every practicable effort was made to encourage ascertainment and promote treatment. There was in fact much cause in this survey for thankfulness for the results achieved in the past quarter of a century but no excuse for slackening of effort if the ground won is to be maintained. The rural areas certainly need more attention, for soldiers' wives are becoming infected and both knowledge and sympathy are required for the organisation of rural clinics.

Admittedly the weak spot in our measures of control is the failure to bring under treatment sufficient females. In this Colonel Harrison was strongly supported by the spokesmen of civilian clinics who found that even in country districts the "vicious amateur" forms a dangerous focus of disease and remains impervious to reason and education. Is any form of compulsion practicable? Though no vote was taken the meeting appeared to be unanimously of the opinion that it was. Suggestions for compulsory notification or treatment of venereal disease have been vigorously opposed in the past, partly because they recalled the ill-inspired Contagious Diseases Acts and regulation 40D of the last war, partly because it appeared impossible to devise a scheme equitable as between the sexes and free from the danger of injustice to individuals. If improved methods of diagnosis and administration can enable local authorities to eliminate the hard core of recalcitrant offenders without injury to the public a great advance will have

been made in the campaign against venereal disease. The benefit to the coming generations would itself justify the Minister of Health in testing medical opinion on the point.

## CLOSE-UP OF SPERMATOZOA

THE electron microscope, which gives effective magnifications of 50,000 or more diameters, and has already told us much about bacterial appearances under electron bombardment, has lately been turned on the spermatozoon in the hope of resolving some of the outstanding doubts about its structure. In this apparatus magnetic-field "lenses" replace the glass ones of compound microscopes and differentiation depends on differences in density within the specimen rather than on variation in refractive indices or colour. The conditions for examining specimens by electron microscopy are important because the vacuum, the drying of the specimen or even the electron bombardment itself may cause artefacts which can masquerade as normal structure. It seems, however, that Seymour and Benmosche [1] have seen more clearly than hitherto a normal human spermatozoon and their pictures—three are needed to include a single sperm—have, at 13,500 and 27,000 diameters, clear-cut definition. At these magnifications the pear-shaped head of the human sperm has a crater-like notch on the vertex and within it a structure less opaque than the rest of the head. The body of the spermatozoon, which when seen by refractive microscope was called the neck, is segmented, having 9–12 segments in the specimens examined. Throughout the length of the body runs a core, uniform in diameter and denser than the surrounding segments, and it is this core which becomes the tail. The tail does not end abruptly but breaks up into a blurred smudge and it is much longer than has previously been described. The belief that the body of the sperm contains a skein formation was not confirmed but the segmentation probably explains the extraordinary motility of the head as it is propelled forwards. With motion pictures Seymour and Benmosche watched the head of a spermatozoon penetrating the ovum in the first stage of fertilisation and they speculate on the possibility of the notch on the vertex containing some sort of suction apparatus which helps penetration.

## EXTRA MILK

THE medical certificate required under the Sale of Milk (Restriction) Order, 1941, has come in for some criticism, and the Ministry of Food is discussing possible alternatives with the B.M.A. Extra milk, up to a limit of 2 pints a day, may only be recommended if the patient is suffering from (*a*) active tuberculosis; (*b*) silicosis; (*c*) conditions in which the patient is unable to swallow solids by reason of an affection of the mouth, throat or gullet; (*d*) gastric, duodenal or anastomotic ulcer; (*e*) illnesses characterised by high and prolonged fever; or (*f*) the results of a major operation. This list was drawn up by the special diets committee of the M.R.C. and must cover the majority of indications. It is questionable, however, whether the doctor should not have been left free to consider each case on its merits. On the other hand, it is an unenviable task to refuse milk to any patient, and the doctor may sometimes be glad of such definite grounds for refusal. The certificate when completed is handed by the householder direct to the milkman. This is intended to simplify and hasten procedure, but many patients will object to their disabilities being thus revealed to tradespeople. It would surely be sufficient if the doctor stated that the patient was suffering from one of the conditions on the prescribed list without specifying which. Members of the national milk scheme, children receiving milk in schools, and patients in hospitals and nursing-homes are excluded from the restrictions, and other people who are accustomed to drink a lot of milk will automatically have a large ration, since this is calculated as six-sevenths of the previous consumption. The number of cases which cannot be met by a little readjustment within the household is therefore likely to be small.

1. Seymour, F. I., and Benmosche, M. *J. Amer. med. Ass.* 1941, **116**, 2489.

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Colonel (temporary Brigadier) ALEXANDER HOOD succeeds Lieut.-General Sir William MacArthur as director-general of the Army Medical Services on Aug. 1. Brigadier Hood graduated from the University of Edinburgh in 1910 and received a commission in the R.A.M.C. two years later.

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## SYSTOLIC MURMURS

IN his Honyman-Gillespie lecture in Edinburgh last week Prof. D. M. Lyon said that up to the end of last century any cardiac murmur was usually taken to indicate heart disease. Then began a swing in the opposite direction and the study and significance of murmurs became derided. He believed that a balance was necessary. Murmurs were produced when turbulence was introduced into the blood-flow. This could be caused by changes in the speed of flow, or the viscosity of the fluid, and by constriction of the channel. Mere roughening of the surface of the channel did not produce eddying. Mitral systolic organic murmurs varied from soft gentle blowing sounds to loud rasping sounds according to the state of activity of the heart muscle. The murmur of dilatation was softer and not so well propagated. Tricuspid systolic organic murmurs were relatively rare; they were of higher pitch than mitral murmurs and poorly propagated. In view of the reputation of the tricuspid valve as an escape valve it was surprising that tricuspid murmurs were heard so seldom. At the aortic valve organic narrowing was relatively rare and most systolic murmurs were due to dilatation of the aorta along with thickening of the valve, especially the slight projection of a fibrous or calcified cusp. Pulmonary systolic murmurs were still rarer and most were congenital. Functional murmurs were always systolic except for the murmur of pulmonary incompetence sometimes found in conditions of raised pulmonary blood-pressure. They were mostly feeble and poorly conducted. They were probably found in 3% of all recruits and in 80% of athletes after severe exercise. In children various reports put the incidence at between 10 and 60%. The cardio-respiratory murmur was heard along the left border of the heart and beyond; less frequently over the right side. It often occurred in healthy persons. In quality it resembled interrupted breath sounds of which it was really an accentuation. An interrupted puffing or whiffing sound was present during the whole of inspiration and might extend into expiration. It was usually heard best with the subject in the upright position and stopped if he held his breath. Exercise increased its intensity which, however, was very variable at different examinations. Hæmic murmurs were caused by turbulence due to decreased viscosity of the blood; they were heard at both base and apex but the mechanism must be different—turbulence of the flow at the aortic and pulmonary valves and dilatation of the mitral valve. Hæmic murmurs should not be diagnosed in the absence of severe anæmia. When the heart was over-active or too rapid functional murmurs might be heard at the apex. These were common during excitement and in "soldier's heart." A thrill might be palpable and the first sound appear rough. These features disappeared when the heart-rate fell and must not be taken as indicating mitral stenosis. The murmurs of hyperthyroidism and fever were of the same nature. Pulmonary functional systolic murmurs were mostly faint and poorly conducted and were largely due to slight variations in shape or deformity of the pulmonary vessels; that was apart from cardio-respiratory and hæmic murmurs. They were found largely in children and young people with plastic chest walls, and might be produced by pressure of the stethoscope. It was important to remember the subclavian murmur heard beneath the clavicle when the arm was raised.

# Special Articles

## PUBLIC-HEALTH PROTECTION IN THE U.S.S.R.[1]

EVERY citizen in the Soviet Union has the right to free skilled medical care, from outpatient hospital service to special treatment in clinic or sanatorium. The state pays the salaries of all medical workers and maintains all the hospitals, polyclinics, dispensaries, institutes and health resorts as well as providing funds for research. A single authority thus controls all medical services in town and country, as well as measures for controlling infectious disease, sanitary inspection, housing, industrial medicine, communal feeding centres, maternity and child welfare, health resorts, research and medical education. Prophylaxis forms the basis for all the public-health measures, and the attack on first causes—poor working and living conditions and so on—has succeeded in eliminating much of the disease of former times. An eight-hour working day has been introduced, and all workpeople get an annual holiday of two or four weeks on full pay. Employment of children is prohibited, and that of adolescents is restricted. Pregnant women and young people are not employed in dangerous occupations or on night-work. Social insurance is widely developed, offering financial security in illness, invalidity, pregnancy and old-age. Supplementary state grants have been introduced for nursing mothers.

First-aid or health-protection centres have been established in all factories, mines and the like, and the doctors and nurses attached to them control the sanitation of workshops, and public dormitories and dining-rooms, keeping a watchful eye on working conditions and safety measures, as well as studying the causes of industrial accidents and occupational diseases, devising means for their prevention, examining all new workers on their arrival and at regular intervals afterwards if they are adolescents or engaged on harmful occupations. They also teach the principles of hygiene to the workpeople, arrange for special jobs for those in poor health, and are at hand to give first-aid in cases of accident or sudden illness.

Workpeople who require special treatment are sent from the centre to the polyclinic or hospital, or to the night or day sanatoriums where they can spend the rest of the day after working hours in receiving medical attention. The centre can also arrange for a workman to get his food in one of the dietetic dining-rooms, the cost of the special diet being partly or fully defrayed by the state.

The district or factory polyclinics provide outpatient medical services for all citizens in their area. If the patient is not fit to attend he can telephone to the polyclinic for a doctor who will attend him at home. A single type of outpatient record-card is used throughout the hospitals of the Union. It has space for a complete history and diagnosis, and for the doctor's prescriptions and recommendations, so that when a patient is admitted to hospital his record-card comes with him from the outpatient clinic, and when he is discharged the full details of any inpatient treatment he has received are set down for the information of the doctor outside.

### CONTROL

Public-health protection is under the control of the People's Commissariat for Public Health of the Union, but this body exercises direct jurisdiction over only certain particularly important (from the state point of view) medical and sanitary institutions, educational and research institutes and health resorts, and over the manufacture of surgical instruments, and equipment and drugs. Other medical institutions are controlled jointly by the Union commissariat, the local soviets and the commissariats of the autonomous republics concerned. The scheme thus includes the all-Union commissariat, the individual commissariats of each republic, the territorial, regional or city departments of public health, the hospitals, polyclinics, factory health-protection centres, rural medical centres and the visiting doctors. At its head is the people's commissar for public health, who is a member of the government. He is also chairman of the collegium which meets once a week to implement government decisions and draft the instructions to be sent out to the other public-health bodies. On technical questions the commissar is advised by a scientific medical council, and he has the power to enforce what measures he thinks fit to improve the medical services and ensure that all hospitals and clinics are using the most effective methods of diagnosis, treatment and prevention. The commissariat has also set up various boards and departments to deal with special problems, such as skin and venereal diseases, as well as with the administration of the urban and rural hospitals, &c. A special department controls all the special hospitals and other institutions for the treatment of tuberculosis.

The entire network of anti-epidemic institutions—anti-plague hospitals, centres, trains and laboratories, anti-brucellosis stations, anti-malaria, anti-insect and anti-rat measures, and bacteriological laboratories—are under the direct supervision of a special board at the commissariat, and this body also supervises the production of vaccines and sera. Another department of the commissariat undertakes the sanitary inspection of all factories, shops, public dining-rooms and so on, and has its representatives—qualified doctors—in all the large industrial concerns. Its inspectors have power to put an immediate stop to any infringement of the regulations they meet with.

Much attention is given to the welfare of mother and child, and every district and every large works has its nurseries and kindergartens. The best sanatoriums throughout the Union have been set aside for children. A good deal of research is being carried out into mother and child protection, particular attention being given just now to painless childbirth. There is a vast network of maternity homes and special maternity wards at hospitals, antenatal and postnatal consultation centres, special hospitals and health resorts for children, infants' homes, nurseries, kindergartens and milk-kitchens. The obstetrical departments are responsible for supervising the working of the law prohibiting abortion. All sanatoria and spas are owned by the state and supervised by a single department, which is also in charge of the balneological research institutes at Sochi and Pyatigorsk.

The whole drug-manufacturing industry is managed by the Commissariat for Public Health, and all pharmacies belong to the state. No patent medicine can be offered for sale until it has been passed by a medical body, and new drugs of all kinds must be checked in the state institutes and clinics before they are offered to the public.

The economic and social life of the country is regulated by the third five-year plan, which lays down what sums are to be spent on training doctors and nurses, on the erection of new medical institutions and the like. On the basis of the general plan the Commissariat for Public Health works out a plan for each republic; this in turn allocates funds to the constituent regions, and so on down to towns and districts and to the individual hospitals and clinics.

1. Based on material supplied by the U.S.S.R. Society for Cultural Relations with Foreign Countries, Moscow. A full account of Medicine in Russia will be found in three articles in the *Lancet* of 1936 (2, 329, 393 and 450).

## MEDICINE AND THE LAW

### Income Tax and Subscriptions

IN Simpson *v.* Tate it was decided many years ago that a medical officer of health could not deduct from his income-tax assessment (Schedule E) the money he spent in subscriptions to the Royal Society of Medicine, the Society of Medical Officers of Health, the Royal Institute of Public Health and the Association of County Medical Officers of Health. In vain he protested that he could not keep himself up to date in sanitary science and public health unless he enjoyed the facilities given by these bodies in the form of printed journals and periodical discussions. The Income Tax Act will allow the deduction only of sums which the tax-payer is obliged to expend "wholly, exclusively and necessarily in the

performance of his duties." Such is the wording of Rule 9 of the "Rules applicable to Schedule E," which are hidden away in a corner of the act. The judge would not allow the expenditure upon subscriptions to these bodies to be put so high. The point arose again in July when a London County Council divisional engineer sought to deduct the amount of his subscription to the Institution of Civil Engineers. He could fairly maintain that he could not have obtained his appointment unless he had been a member of the institution or had held other approved qualifications: that his duties involved his maintaining a recognised professional status and that it would be unprecedented and inconvenient for a man who held the post of divisional engineer to relinquish his membership of the institution while so engaged. The court, however, accepted the Crown's contention that it was not enough to show that the office-holder must necessarily incur the expense of membership of the institution in order to obtain or keep his post or to win promotion. It seems a pity that the L.C.C. did not deduct the amount of the subscription before paying him his salary; his tax assessment could then have been reduced *pro tanto*. Hitherto it has been supposed that the tax-payer can deduct his subscription to a professional body if the terms of his appointment require him to be a member of the body. The law is careful not to allow him to deduct expenditure (for example, on books) which he incurs merely for the purpose of fitting himself to take up the appointment.

For the medical man who is in private practice and is not an official the case is different. Rule 9 of the Rules applicable to Schedule E is no longer the relevant standard. It has been usual to allow him to deduct subscriptions to professional journals, to the British Medical Association or to a medical defence society. Outside these established concessions, the revenue authorities allow the deduction of a subscription to a professional body when satisfied that the body spends the money on objects which would have justified deduction if the tax-payer himself had spent his money on them. As usual, there is a working arrangement by which particular bodies are accepted as being within this category. Much indeed of our income-tax law consists of working arrangements recognised in departmental practice. That is why the Income Tax Act, with its long tail of amendments by subsequent Finance Acts, is no very helpful guide to the tax-payer even if he could comprehend its complicated clauses. That is why, too, the chartered accountants who specialise in income-tax matters thrive upon the complication of the law. They know the kind of deduction which the Inland Revenue officials habitually allow. Thus not only must the tax-payer pay tax, but he must also pay experts a fee for helping him to do so.

## SCOTLAND

### ADVICE TO EDINBURGH GRADUATES

Prof. D. K. Henderson gave three golden rules to the new graduates at Edinburgh on July 16. He said: do not arrogate to yourselves a knowledge which you do not possess; do not be afraid to say you do not know; do not hesitate to ask for a little time to think things over. Every scientist and research worker would subscribe to these precepts. In issues involving life and death they could not afford to be casual or thoughtless, though an emergency might sometimes compel them to act promptly. For the young doctor sense—implying exactness and soundness, power and promptitude of mind—must be the master faculty. But he must have genius too, a real turn for his profession, and presence of mind. How man lived, moved and had his being was still an unsolved mystery, but they could be certain that he should not be thought of as a stomach, heart, lungs, or bowels, but as a whole personality. His likes and dislikes, his loves and hates, his fears and hopes, his aspirations and disappointments might supply the key to his more mundane complaints. Man himself, how he was constituted, how he reacted and responded biologically to the stress and strain of life, whether physical or psychological, must be studied as well as the symptoms associated with individual organs. Medical work was far from being a rule-of-thumb affair. For success it required elasticity of mind and a many-sided approach. It had been said that every doctor should be a good sociologist. He should also be something of an educationist, and if he was, he would steer clear of over-specialisation, and recognise the social as well as the scientific side of medicine.

### DIPHTHERIA IMMUNISATION

A new effort is being made to stimulate interest among parents of children who have not yet been immunised against diphtheria, and to have the children immunised before the winter. Out of a total child population of 1,124,500 in Scotland, 529,679 or about 47% have been immunised. The percentages in individual districts vary and in some places the goal of 80% has been reached and exceeded. On the whole the proportion of school-children immunised is higher than of pre-school children, and the proportion in rural districts is much higher than in the towns. Dr. Andrew Davidson, chief medical officer to the Department of Health for Scotland, recently announced a new and much appreciated service. In Coatbridge and in Perth medical officers with the aid of mobile vans carrying the necessary equipment had immunised the children in their homes. The new publicity campaign is to be carried out by the Department of Health with the coöperation of the Ministry of Information. They will use a film called "Defeat Diphtheria" which shows the complications which may arise from neglect to obtain medical advice.

## Parliament

### Last Touches to the Pharmacy Bill

WHEN Mr. ERNEST BROWN, on July 22, brought forward a new clause to the Pharmacy and Medicines Bill that the professional side of the bill should be enforced through the Pharmaceutical Society, he was doing so at the request of the House and the clause was quickly approved. Clause 2 of the bill gives power to the statutory committee of the society to consider cases of misconduct or of conviction for a criminal offence where the pharmacist concerned was temporarily unregistered by reason of the non-payment of fees. Captain G. S. ELLISTON moved a new clause extending this principle to corporate bodies carrying on a chemist's business, and a second clause requiring the chairman as well as the majority of the committee to be satisfied before a company is penalised. Both clauses were quickly accepted. Mr. BROWN then moved important amendments designed to enlarge the scope of the definition of disclosure by including quantities, and laying down that so far as possible the constituents should be expressed in everyday language. But Mr. Brown was sure the House would not wish him to lose accuracy for popularity and he had therefore fallen back on disclosure in terms which would be readily understood by a doctor, chemist, or any other expert. Disclosure was required in one of the following ways:

(1) Where a medicine or a constituent was a poison in the Poisons List the name to be used was then required in connexion with the labelling of the poison;

(2) Where it was not a poison, but was described in the British Pharmacopœia or the British Pharmaceutical Codex, the description at the head of the relevant monographs must be used.

(3) Where it was neither a poison nor described in the British Pharmaceutical Codex, then the accepted scientific name, or other name descriptive of its true nature, must be used.

The second part of the amendments required the quantities of the named constituents to be disclosed either by giving the percentages of the medicine or by stating the actual amounts. When a medicine was supplied in the form of pills or tablets the percentage of the constituent in the medicine; the quantity in each pill or tablet; or the quantity of the constituent in the whole article must be disclosed.

Sir FRANCIS FREMANTLE in thanking the Minister for the amendments said that we must rely on the press to continue its useful function of interpreting technical phrases to the general public. It was to the credit of the proprietary trade that they had accepted the principle of quantitative disclosure. The amendment

had the unique advantage of satisfying everybody, including Sir Francis.

Sir THOMAS MOORE made another effort on behalf of the herbalists. After an assurance from Miss F. HORSBRUGH that there was nothing in the bill to prevent herbalists from treating people and selling medicines if they disclosed their contents he withdrew his amendments, though hinting that his protégés might make themselves heard in "another place."

Sir FRANCIS FREMANTLE in expressing satisfaction at the passing of the measure paid a tribute to the work of Captain Elliston. He pointed out that it was not true that the medical profession had a monopoly of treatment. Everyone could get treated, or maltreated, as much as he liked. The Medical Acts had been passed, not to give privileges to the medical profession, but to give protection and guidance to the public. Mr. GRIFFITHS once more pointed out that the best protection was a positive medical service, making all that science knows available to all on equal terms.

The bill was given a third reading unanimously and has since been read a second time in the House of Lords without change.

## QUESTION TIME

### Teaching of Mothercraft

Sir FRANCIS FREMANTLE asked the Minister of Health if he had considered the report from the National Association of Maternity and Child Welfare Centres urging the immediate need of the teaching of mothercraft to schoolgirls; and if he would consult with the President of the Board of Education with a view to putting this recommendation into operation.—Mr. E. BROWN replied: I have noted the report with much interest. Its recommendations fall mainly within the province of the Board of Education, but I shall be glad to consult with the president on the steps that it may be possible to take towards carrying them out.

Sir FRANCIS FREMANTLE then asked the President of the Board of Education if he was aware that teachers, probation officers, doctors and social workers were generally anxious for the teaching of mothercraft to be given to schoolgirls as the best means of attacking juvenile delinquency; and whether he would arrange for such teaching to be given throughout the country.—Mr. R. A. BUTLER replied: A chapter of the Board's handbook of suggestions for teachers on health education is devoted to mothercraft and I shall continue to foster such instruction as is practicable for schoolchildren.

### Women Medical Officers in the Forces

Sir FRANCIS FREMANTLE asked the First Lord of the Admiralty why women medical officers recruited to the Navy were not given the rank, status and title accorded to male medical officers in the service.—Sir VICTOR WARRENDER, deputy secretary to the Admiralty, replied: Only one woman medical officer is employed and she holds the relative rank of surgeon lieutenant, R.N.V.R., and receives the pay of an officer of that rank. She wears the distinguishing stripes of a surgeon lieutenant on her sleeve.

Sir F. FREMANTLE: Do you not recognise that the distinction is insufficient for the duties of the officers and that the Admiralty are behind-hand in not having women medical officers?—Sir. V. WARRENDER: If we were to supply women doctors to look after the W.R.N.S. personnel it would mean duplicating the medical staff, and that would lead to inefficiency. The W.R.N.S. were canvassed on their wishes in the matter and only 2½% expressed a wish to have women doctors.—Dr. EDITH SUMMERSKILL: That shows how reactionary the Navy is.

In answer to a similar question, the Secretary of State for Air said that women medical officers commissioned for service with the medical branch of the R.A.F. have the status of officers, and the relative ranks pertaining to their duties, and they are addressed as medical officers. Sir F. FREMANTLE: I should like to know why the title is not given as for male medical officers, and whether it is decent and congruous that a woman medical officer should have to be addressed as Miss Smith, medical officer, with the relative rank, squadron-leader or whatever it may be? Sir A. SINCLAIR: In the women's services, such as the Women's Auxiliary Air Force and the nursing services, special designations apply to the members. Sir F. FREMANTLE asked if he did not recognise that women medical officers are in a quite different position from other women officers.

### Radiological Examination of Recruits

Mr. GRAHAM WHITE asked the Minister of Labour if there were facilities for the radiological examination of recruits for His Majesty's forces; and if he would consider making such examinations general.—Mr. ERNEST BEVIN replied: Where they consider it desirable the medical boards which examine recruits for His Majesty's Forces may arrange for radiological examination before determining the man's grading. A suggestion that all recruits should have a radiological examination was considered last year by the medical advisory committee under the chairmanship of Lord Horder, and the committee decided that its adoption was impracticable.—Mr. GRAHAM WHITE: But not undesirable? Mr. BEVIN: No, it is a question of equipment and staff.

### National Loaf in the Army

Sir STANLEY REED asked the Secretary of State for War if he would give the extent to which the national loaf and national flour were used in the feeding of the Army.—Captain H. D. R. MARGESSON replied: Arrangements are being made for at least a quarter of the bread supplied to the Army to be made from the new national flour, and this will be gradually increased as stocks of white flour are used up.

### Analgesia in Childbirth

According to the returns made up to Dec. 31, 1940, 49 out of 188 local authorities had made arrangements approved by the Central Midwives Board for instructing midwives in the administration of analgesics. Apparatus for administering analgesics was supplied by 33 authorities during 1940 as compared with 21 during 1939. Under special arrangements made by the Ministry of Health with the National Birthday Trust, 43 machines have been supplied to emergency maternity homes in which the staffs are adequately trained in the administration of gas and oxygen.

(Mr. BROWN replying to Dr. SUMMERSKILL.)

### General Medical Council Appeals

Mr. T. E. GROVES asked the Lord President of the Council whether, having regard to the right of dentists, pharmacists and certain other professional persons, to appeal to the courts against disciplinary decisions, appropriate steps would be taken to amend the law and give doctors a similar right.—Sir JOHN ANDERSON replied: I am not satisfied that there is any general desire in the medical profession for such legislation at the present time.

### Silicosis Research

Mr. JAMES GRIFFITHS asked the Minister what progress had been made by the Medical Research Council in their investigation into the problem of silicosis among coalminers.—Sir J. ANDERSON replied: The medical part of the investigation was completed some time ago and the draft report has now been revised for publication at an early date. The environmental studies have also been completed except for the examination of a small part of the material collected, and these form the subject of a second report which is being prepared. It would be impracticable to summarise the results of a complicated and highly technical investigation.

### Milk for School-children

Mr. H. BROOKE asked the Parliamentary Secretary to the Ministry of Food whether any arrangements existed for making sure of an adequate weekly milk-supply for children over five not attending a school where the state-aided school milk scheme was in operation.—Major G. LLOYD GEORGE replied: This is one of the matters which is being considered in the review of milk distribution arrangements which the Minister is now making.

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SYMPOSIUM AT MARX HOUSE.—On Aug. 16 and 17 the science faculty of Marx House will hold a discussion on Frederick Engels's works, "Dialectics of Nature" and "Origin of the Family, Private Property and the State." On Aug. 16 at 3 P.M. Prof. H. Levy, D.Sc., will open a discussion on philosophical methods and the sciences, and at 7 P.M. Prof. J. B. S. Haldane, F.R.S., will speak on modern scientific achievements and their bearing on dialectical materialis. On Aug. 17 at 10 A.M. Prof. George Thomson will open a discussion on historical materialism applied to primitive communal society and in the afternoon Prof. J. D. Bernal, F.R.S., will summarise the results of the discussions which take place at Marx House, 37A, Clerkenwell Green, London, E.C.1.

# In England Now

*A Running Commentary by Peripatetic Correspondents*

BEFORE the outbreak of war the duties of a group officer were to arrange for the staffing of all hospitals in his area, to decide the functions of each hospital and to make plans for the evacuation of hospitals and their valuable equipment. After the outbreak of war he directed movements of patients between the hospitals in his group, and since the scheme embraced municipal hospitals, he worked in close coöperation with his medical officer of health. This city possesses two hospitals, each having roughly 500 beds. I well remember the hospital officer telling me on my appointment that evacuation would be easy: instead of 1000 beds I should have 2000 beds in the reception area. This proved optimistic. About 1300 beds are the maximum in the immediate reception area, and most of them are occupied by civilian sick. When severe air-raids have occurred, we have had to transfer cases to the outer reception area under direction from the regional hospital officer. They go in converted-bus ambulance and motor ambulance convoys. In the autumn of 1940 a "communications" exercise was carried out in central control. Thanks to our vigorous imaginations the numbers of supposed casualties far exceeded any that have occurred in actual raids. Not only were motor ambulance convoys summoned, but an ambulance train was brought up to take slightly wounded cases to the farthest towns in the region. Nothing like this large scale transfer has ever been necessary in practice, but we enjoyed it at the time. The first twelve months of the war passed without what are officially called "incidents," and it was not until September and October, 1940, that there were raids. The more memorable of these occurred on four successive nights. The municipal hospital, which is unfortunately placed in a very vulnerable spot, had several bombs dropped in the grounds which shook it up considerably. After this we decided that top floors must not be used for patients, and it was reduced to the rank of a casualty clearing station with only 100 beds.

The first noteworthy raid occurred in November. On reaching central control I learned that one of the hospitals had been hit, so I walked over to find out what had happened. I was met by the R.S.O. who asked reasonably enough if he could possibly go on operating in the casualty theatre. The windows were blown in, a bomb on the boiler house had put an end to central heating and the water mains had been severed. Seeing there was no light, no water and no heat, but more than enough frosty night air, it was fairly easy to decide that further operating in this theatre was out of the question. In the two other theatres operating continued for a short time longer, but the snowfall of plaster flakes from the ceiling soon stopped that. The only thing left to do was to arrange for the evacuation of everyone in the morning. Patients and nurses were evacuated during the day, and by dusk the last patient—a German navigator—had been sent off to a military hospital. "If only I could tell them how good you all are," he said to the nurses during the raid, "they would'nt drop bombs on the hospitals."

We learned some useful lessons from that raid. Ought we, for example, to send street casualties from the periphery into the two main hospitals? There were strong arguments against it: the hospitals lay in the centre of the city and it was a case of moving the injured out of the frying pan into the fire; street obstructions from craters, with consequent diversions of traffic, hampered the movements of ambulances. It is difficult to realise how isolated one is and how hard it is to organise. Although we thought everything had been provided for, the scale of destruction proved we were wrong. The outside ambulances duly arrived at the city boundary, but they were held up there until guides could be found to lead them through a Hampton Court maze of strange streets.

For future occasions we arranged a rendezvous for ambulance convoys, enrolled guides and despatch carriers to go on foot or bicycles. The medical officer of health and I drew up two schemes for evacuation depending on the severity of the raid. In small raids, we decided, cases should be taken as before to the nearest city hospital. In larger raids all cases except those in the immediate vicinity of the larger hospitals should be taken out to the nearest aid post, and from there transferred to a reception hospital. The aid posts, chosen by the medical officer of health, formed an almost complete chain round the circumference. If communication with central control should break down, the second plan was to come into force automatically.

* * *

This reshuffling of Government posts annoys me. Our minds naturally picture the politicians we read about daily as Gilbert and Sullivan figures—we know well enough what a First Lord looks like, or a Lord Chancellor—then suddenly we have to think of them changing their dresses and their characters. Take Mr. R. A. Butler's appointment to the Ministry of Education. For years he has been the perfect popper-up with the obvious answer, "The sub-subcommittee of the chairman's subcommittee of the Non-Intervention Committee . . ." he was particularly good at that sort of thing. Suddenly we have to picture him as a sort of super-schoolmaster. Has he had anything to do with education? My dear fellow, what has that got to do with it? These politicians have such colossal minds, such terrific experience, that aided by their experts—why, technical knowledge can be an absolute handicap; he'll read up education in a couple of nights. One's exasperated mind falls back on fantasy. The Lord Privy Seal is in a four-post bed, looking anxious. "You've got pimple-itis" I say sternly, laying down my stethoscope, "*and must be operated on at once.* I'll 'phone Lord Nibs." "But-but I thought he was a physician," says a wan voice from the bed. "Yes, yes, he is, but in a crisis like this we must get the best brains. He reads a lot, you know. Broad view, and so on, and his wife's a charming woman."

* * *

Cerebral arteriosclerosis, not uncommon among centenarians, appears to be singularly lacking in Mr. Punch. He has his moods, of course, and his off-weeks, but those who say that he is not what he was are, in fact, condemning themselves. Of his infancy and adolescence much has been written; as a child he was often befittingly ingenuous and in the insolence of young manhood he was something of a snob, but he got over it. In his maturer years he introduced us to the early Milne which set a new standard in humorous journalism. Some of it was thin stuff, but the Rabbits it may be remembered lowered an egg-proof curtain during their amateur theatricals; nice humour that, judged by whatsoever standard you please. There are still plenty of us who gratefully recall our weekly doses of R. C. Lehmann and E. V. Lucas; and the apparently inexhaustible flow of "Evoe" who coined that immortal description of athletes as "nothing more nor less than martyrs to exercise." There was also a young A.P.H., more naïve and less propagandist in those days, who assured us that the grasshopper couldn't make its peculiar noise by rubbing its knees together since he himself had tried it in the bath and it didn't work. In the stern days of O.S. the occasional contributor had to be accurate and not facetious. There were more misses than hits, of course, but an MS. returned with "suggestions" pencilled in the margin could be regarded as a near-miss, whereas an acceptance was never couched in more positive terms than "I think I can use . . ." There was once a young man who devised, collected and hopefully dispatched some 50 paragraphs of would-be charivaria. "One retained for possible use" was O.S.'s devastating reply.

* * *

This sex business is getting beyond a joke. My elderly Dandie bitch, who ought to know better, has suddenly and without warning become as irresistible as Cleopatra and Helen of Troy combined, with the result that the garden and—if you don't watch out—the house itself are infested with an assortment of ardent curs of every shape and size. Among the most neurotic and least successful of her suitors is a small nondescript terrier who, owing to the proximity of bigger and stronger competitors, sees fit to woo from a distance. This he does by giving vent to a series of indignant yaps which unless steps are taken continue for days and nights on end until he finally becomes so hoarse that he can't speak at all. Air-gun slugs shrewdly aimed at his posterior produce only temporary relief and I am

seriously contemplating the use of shot-gun cartridges loaded with dried peas. The soldiers billeted on us lovingly finger their rifles but there are limits. Another of her suitors is an undersized and not very successful near-spaniel, but for some reason or other the lady will have none of him. Two sheepdogs, built on collie lines, she finds equally attractive, but mutual jealousy permits neither to steal a march on the other. It is remarkable how they sneak into the house, and for the matter of that out of it, without sustaining any mortal injury from well-aimed kicks or heavy missiles thrown at them. While these two are glowering at each other a small Scottie contrives to make a good deal of hay, and on present form he seems most likely to be the father of the next unwanted litter. Of course, it is all very educative, for the children. The other day my small daughter ran into the house wringing her hands and crying: "Daddy, Daddy, come at once. Jenny has been married five times!"

* * *

Our hospital was very heavily bombed three months ago. My laboratories got a direct hit and are levelled to the ground with the work of 30 years—records, materials, apparatus and specimens—lying somewhere under the debris. The hospital is determined to carry on and repairs are being effected as quickly as possible. Meanwhile the various departments, including the path. lab., are functioning in a block of empty flats nearby. There is in the grounds an old disused patient's shelter left derelict from the early days of open-air treatment. It has a good tiled roof and a steel framework, but no walls or (in fact) anything else. We have started to put walls round it and turn it into a temporary pathological department, and I think it will not be a bad one, though it will cover only about a third to a quarter of the area of the original. It has been passed by the necessary authorities for the duration of the war, and will constitute our second temporary home.

* * *

"From ghoulies and ghosties and long-leggity beasties and things that go bump in the night good Lord deliver us"—so runs the old Cornish prayer written at a time when cockchafers were the only things of importance which might go bump in the night. Sleeping out in a tent is, in my view, always a hazardous and uncomfortable proceeding but my wife says it is good for us, so of course we sleep out in fine weather. The other night I was just getting off to sleep, after destroying a couple of hundred culices in the air or on the ground and reinflating the pneumatic mattress which had died on me, when I heard the stealthy tread of a wild beast which crept up and began to gnaw one of the guy-ropes. Seizing a slipper I sprang up prepared to sell my life dearly. He was easily picked out in the moonlight crouched ready to spring and lashing his tail, but seeing that I meant business he thought better of it and slunk away among the gooseberry bushes. He was a field-mouse, as a matter of fact, but as I explained to my wife it would have made no difference to me had he been a tiger or a parachutist. She smiled proudly—or perhaps cynically, I cannot be positive which. Enigmatically would be a better word.

* * *

The school M.O. was examining evacuees. As two boys were shown into the room he took one glance at them and then his face lit up as he exclaimed: "Aha, twins!" One of the boys disdained any reply, merely sniffing and wiping his nose on the back of his hand. The other, with a look of contempt for this prattling doctor, said flatly: "No, we're *not* twins." The S.M.O., palpably deflated, motioned to the boys to be seated while he took their names and addresses. Having finished this, he stood up with a look of triumph on his face. "I told you so!" he exclaimed, "You're as like as two peas; you have the same birthday; and you have the same father and mother. You're twins.' "No, we're *not* twins," said the more talkative one emphatically. "Well, what are you?" demanded the medical officer irritably. "We're all that's left of triplets."

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CIVIL DEFENCE AWARDS.—For brave conduct in civil defence the M.B.E. has been awarded to Dr. Isobel MacAlister of Wallasey, and the George medal to Dr. Percy Horsburgh of Nuneaton.

# Letters to the Editor

## PENSIONS APPEAL TRIBUNALS

SIR,—In the House of Commons on July 16 Sir Ian Fraser again besought the Minister of Pensions to set up independent appeal tribunals to deal with claims for war pensions. The Minister admitted the need for these tribunals and said he would establish them tomorrow if he could; the lack of medical men with sufficient experience was his main difficulty. He estimated that to set up two tribunals in each region he would need 26 doctors and a further 25 to prepare précis of the cases for the appellants. In addition to the doctors 26 barristers and a lay staff of some 400 would also be needed. As far as the doctors go I am confident that the Minister could find the men. Retired practitioners, whose contacts with clinical work are not so remote as to render them useless, are aching for a chance of doing something. Even men of seventy or over are not necessarily senile and work such as this needs, above all, experience and judgment. Reference to the national register (which seems to be curiously overlooked) would verify their existence and availability. The 25 précis writers would surely be easy to find; it does not require much physical energy to sit in an office and deal with familiar things. Experto crede. I should volunteer at once if I got a chance, and my name has been on the register for months.

Henley-on-Thames. ALFRED COX.

## MEDICAL SERVICE IN NEW ZEALAND

SIR,—From time to time paragraphs appear in THE LANCET reporting, with greater or less bias, or at least with the colour of strong personal opinion, the alleged course of events in the medical world of New Zealand. Most of these reports bear on their face their own partisan character; and it is needless, therefore, to urge careful readers to treat them with due circumspection. It is, for instance, misleading to picture the government's comprehensive Social Security Scheme as being frustrated by the antagonism and criticism of the medical profession. The main part of that scheme is working smoothly and to the general satisfaction. It has gone far towards giving the people of New Zealand, in a unique degree, proper safeguards against such hazards of life as sickness, unemployment and poverty through loss of the breadwinner or old age.

Even in the sphere of medical benefits, while admittedly there are inadequacies, it is well to remember the very substantial steps forward already taken. We now have a free maternity service for all mothers. Public hospitals provide free medical treatment for all inpatients, and corresponding grants are made towards the expenses incurred by patients receiving treatment in private hospitals (the high quality of the service available in the public hospitals of New Zealand is well known). The state mental hospitals give free treatment to their patients. All of these services are now financed by a part of the proceeds from the universal levy for Social Security.

It remains true that the intended free general-practitioner medical benefits are only partially operative, because of the unwillingness of the New Zealand branch of the British Medical Association to coöperate. But the measure of progress already made towards making in New Zealand a reality of Social Security is fairly to be borne in mind if we are to keep the whole picture in perspective.

In his letter of May 17, Dr. Douglas Robb suggests an unusual line of criticism. For him, a large part of the trouble seems to be that the government have been dilatory in introducing a full coöperative system; they have been too respectful to the competitive basis of practice among doctors; and Dr. Robb's patience, it seems, is almost exhausted. Now, in the light of the clear statements of policy made by the government, is it not evident enough that if the medical profession of New Zealand would, in fact, prefer a national coöperative system of medical service, the government for their part would welcome such a proposal? But does the profession desire this, or is Dr. Robb's merely the voice of one crying in the professional wilderness?

NEW ZEALANDER IN LONDON.

## RADIODERMATITIS

SIR,—There is good reason to believe that the risk involved in setting fractures or removing opaque foreign bodies under the fluorescent screen is not generally appreciated, and as the practice appears to be on the increase the council of the Faculty of Radiologists desire to draw attention to this risk.

That the risk is a real one is shown by reports of cases of X-ray dermatitis of the hands and faces of surgeons in the E.M.S. in this country. There is also a report from Leddy and Rigos (*Amer. J. Roentgenol.* May, 1941, p. 696) of the Mayo Clinic who record 55 cases of X-ray and radium dermatitis in doctors in the period 1919–34 and 80 from 1934–39. Of the latter group only 5 were radiologists, the remainder physicians and surgeons. Of these 80 cases 15 were the result of X-ray therapy, the balance being occupational—i.e., resulting from diagnostic procedures or handling radium; 46 cases (only 3 being radiologists) were directly due to manipulations under the screen, either setting of fractures or removal of foreign bodies; in 30 cases the injuries to the hands had gone the length of ulceration, 21 of the ulcers being malignant.

As no screen apparatus in use at present, not even the recent model using indirect vision, can protect the hands against the rays if the fractured limb is being manipulated or the foreign body being removed while the current is on, these two procedures should be actively discouraged. In both, the operator's hands are inevitably exposed to the direct beam of the rays. The council of the faculty are of opinion that these methods should be used only in exceptionally difficult cases, and that when used the manipulation and viewing with the current on should alternate so that the hands are never in the direct beam. The council also recommend that a radiologist well versed in the factors involved should be in attendance when these methods are used. Further safeguards are the use of an adequate filter, small milliamperage, and low kilovoltage—e.g., 2 mA at 55 kV peak. Experiments show that the output is very greatly reduced if these factors are adopted.

M. H. JUPE,
Hon. Secretary, Faculty of Radiologists.

32, Welbeck Street, W.1.

## ALOPECIA IN FRIGHTENED CHILDREN

SIR,—In your columns recently much has appeared about war neurosis, with evidence for and against such a disease entity. Two unusual cases of alopecia areata in children under 7 sent by Dr. Twiston Davies, dermatologist to the Children's Hospital, Brighton, have recently been examined by me at the child guidance clinic of the Lady Chichester Hospital. In each case the loss of hair followed bombing or machine-gunning incidents. In two such young children an anxiety syndrome caused by war conditions is of importance, and I do not know of any similar record in recent medical literature.

*Girl*, 2½.—Elder of two sisters, no known family history of instability. Previous history: Normal development, healthy but always a bad sleeper, dominated by mother. Sept. 1940: Father in the Army; mother during a bad raid on Camberwell sheltered in the cellar, when the house was shaken by a near hit she wakened the child by shouting in her panic. Three days later the child's hair was observed to be falling out and she talked incessantly of bombs, shelters and so forth. The child rapidly lost all her hair; the mother was advised to evacuate to the country, when there the child's hair grew well under safe conditions. Jan. 1941: The patient and her mother came to Hove, the child not anxious and hair grown over the whole scalp. April, 1941: Ten days after a raid all previous nervous symptoms returned and the patient again began to lose her hair. While being examined at the clinic the wind rattled the window and the child asked anxiously if it was due to bombs and should not everyone take shelter.

*Girl*, 6½.—Youngest of five (three dead). Both parents over-anxious, worrying temperaments. The father has been unemployed frequently during the last ten years. No other family history of instability. Previous history: Normal development; otitis media when teething at 12 months; chickenpox, measles and whooping-cough before school age. School report, very good but over-anxious. Patient dependent on and dominated by her mother. During the autumn of 1940 the patient had screamed frequently in her sleep when the sirens sounded at night. The parents often rushed the child and her brother downstairs or under beds for safety when bombs dropped near by. On another occasion at school she was snatched up hurriedly by a teacher and rushed to a shelter. March, 1941: Alopecia areata noticed about 2 weeks after the road was machine-gunned by an enemy raider when the child was returning home from school. The patient was very frightened and inarticulate on arrival home.

It would be interesting to hear if other cases of alopecia areata had been found when examining children from badly blitzed areas.

Hove, Sussex. C. LAMORNA HINGSTON.

## SUCCESS IN SKIN GRAFTING

SIR,—An annotation in your issue of Nov. 9, 1940, in which the method of skin grafting adopted by Szutu and Chen was taken as a text, implied that pressure is an essential factor in secondary skin grafting and that the area treated must be completely covered by a single graft. I challenged the accuracy of these contentions but you rightly refused to publish a bald denial. I now enclose a reprint of an article which I submitted for publication in August, 1940 (*Brit. J. Surg.* 1941, **25**, 585) wherein both these questions are discussed.

Unless dead tissue can be removed by some other process than separation brought about by tissue reaction, the elimination of sepsis may not be possible or advisable. Rapid control of sepsis, however, in a denuded area will permit the equally rapid application of successful skin grafts with directly proportional effect on contraction and deformity, to say nothing of the time saving with attendant effect on wastage and expense. The use of a single graft will be impossible in large areas. In some sites adherence to this whole-piece policy may be actually detrimental. Taken in conjunction with the ability to dispense with pressure in secondary skin grafting the fractional method of application will permit such a sectional mechanism as for instance the fingers to be dealt with in a sectional manner. No concession can be made to sectional structure if it is considered essential for success in skin grafting (secondary) to deal with the fingers as units, a system which leads to harmful immobilisation.

To my mind, the solution of the problem of secondary skin grafting is the elimination or the rapid control of sepsis, and it is to this end that all available effort should be directed.

London, W.1. PERCIVAL P. COLE.

## "SCIATICA"

SIR,—I fully agree with Mr. Kellgren that sciatica is a clinical syndrome which in the majority of cases is caused by a pathological condition localised not in the sciatic nerve proper. In my opinion we have to distinguish between a true sciatica of nervous origin and a pseudo-sciatica or muscular sciatica of muscular origin. I described such cases of muscular sciatica in the *Lancet* (1940, **2**, 326) and the *Practitioner* (1941, **146**, 167). I differ from Mr. Kellgren in several important points. In my experience patients do not complain of deep pain, but mostly of superficial pain. From my experience as a patient I can say that deep pain, although felt, cannot be localised at all. The superficial pain can be localised approximately only and rarely corresponds to a real dermatome or dermatomes. It is, too, noteworthy that most patients asked to map out the painful areas hesitate for a short time, and only slowly and grudgingly point to the painful skin areas. According to O. Foerster (*Brain*, 1923, **56**, 1) the dermatomes overlap to such an extent that section of a single root in man is not followed by loss of sensibility at all, because the corresponding skin area (dermatome) is also supplied with fibres from the neighbouring roots. Numbness, pins-and-needles and so on are not necessarily of nervous origin. These symptoms can be and often are of purely muscular origin. According to C. M. Bazett and B. McGlone (*Brain*, 1928, **51**, 18) puncture of fascial planes causes sensations resembling those of some forms of neuralgia. They experimented on themselves without a local anæsthetic, thus differing from Kellgren's technique. I have shown clinically (*loc. cit.* and *Brit. J.*

*phys. Med.* 1938, **1**, 302) that superficial structures—e.g., the tendinous origin of tensor fasciæ latæ and tendinous insertion of semi-membranosus-tendinosus muscles—often give rise to referred pain.

In my experience pseudo-sciatica is caused by a muscular disease which can be located objectively in the myalgic spots I have discussed. The muscles affected are tensor fasciæ latæ, gluteus medius and maximus, and sometimes quadratus lumborum. Muscular sciatica can be cured in a short time by the injection of 1–2 c.cm. of 1% Procaine into each myalgic spot.

Sciatica caused by a displaced intervertebral disc is very rare. It must therefore appear surprising that 30% of his cases were referred by Kellgren to this source. I believe that a thorough examination for myalgic spots in the muscles mentioned above would have revealed that a number of these cases were of muscular origin. This examination is simple and very worth while, since a positive result enables us to cure the patient without delay.

M. GOOD,
Lieut. R.A.M.C.

## PREMARITAL TESTS

SIR,—There are certain sections of Dr. Violet Russell's excellent letter which call for further discussion. She says that it is a pity to restrict the functions of a premarital clinic to the performance of Wassermann tests and suggests a short routine physical examination. With this, I imagine, there will be general agreement but I feel I must join issue with her when she says that "For most couples no advice would be necessary and the doctor would only need to wish them luck'" One of the important tasks with which the medical profession will have to concern itself after the war is the stabilisation of the family unit, and the encouragement of parenthood. Effective marriage preparation is an essential factor in the creation of a happy family life. This involves a consideration of the following points:

1. Physical health and freedom from venereal disease.

2. Eugenic problems. Many couples are uncertain as to whether there are elements in their family history which should preclude them from having children.

3. Sterility. Whilst the investigation of this condition in the woman requires procedures which should not be undertaken at this time, it is often possible during a routine examination to discover conditions which indicate the possibility of there being some degree of infertility—which it may or may not be advisable to deal with at that time, but about which the patient can certainly be warned. In particular is it necessary to point out that if conception has not occurred after a year's trial the condition should be investigated and not "left to nature." A man's fertility can of course be assessed much more easily. It is often advisable to do this and indeed the request for such an examination is often made spontaneously by the man.

4. Every woman should be examined before marriage to make sure that the hymen will not interfere with normal and easy coitus and every man to see that he possesses no physical handicap.

5. Much helpful advice may be given regarding technique and the importance of ensuring mutual orgasm. This is a matter about which the public is lamentably ignorant.

6. Children. The need for a couple to prove their fertility early should be stressed and some indication can be given of the sociological implications of marriage and the valuable psychological factors that are involved in the acceptance of the responsibilities of parenthood by both partners.

7. Family spacing. This involves a correct understanding of the positive use of contraceptives and the danger of their misuse. All couples want help on this matter and it is of paramount importance that the medical profession should concern itself with this problem and be in a position to provide young people with constructive principles upon which their married lives should be based. In an ideal society contraception would be sought from, and provided by, doctors either privately or in clinics. Indeed the rightful place for the carrying out of all this premarital work is in the welfare clinics, whose functions should be extended to cover this field. Laboratory help, expert knowledge and time are essential.

8. Many psychological problems arise and can receive appropriate attention.

These few examples must suffice to show the scope and interest in the whole problem of premarital examination and education. In other countries, notably Scandinavia and America, the need for this type of advice is better recognised and more effectively provided.

In order to complete the picture, it is necessary to point out that premarital instruction should be the last phase in a carefully thought out educational system provided for the whole population and embracing home, school and college. Such a policy, based upon biological and psychological principles, should be designed to show that sex is a positive factor in life having widespread personal and social implications which must be properly understood and respected before the individual can hope to reach a fully balanced maturity. This should go hand in hand with a more widespread system of practical instruction in the art of family management and the care of children together with the abolition of those economic conditions which are militating against parenthood.

Harley Street, W.1. EDWARD F. GRIFFITH.

## "INGROWING TOENAIL"

SIR,—While recognising that space did not give Mr. Nuttall room for elaboration, I feel I must protest against the undue simplification of the ætiology of chronic lateral paronychiæ of the great toe. The undue proportion of bilateral cases (by this I refer to both feet, and not to both sides of the nail, conveniently called "double") is not entirely due to tight shoes. Examination of such cases frequently shows the presence of one of two conditions, either ugly flat toenails often ridged and often present on the opposite uninvolved foot in unilateral cases, or unusually long great toes which have led to undue pressure on the shoe. It is surprising how often both these conditions will prove to be a family idiosyncrasy; I have looked after one family in which the father, two sons and a daughter have all lost their nail beds for recurrent paronychiæ. As Mr. Nuttall mentions the name "ingrowing toenail" should be abolished, for it gives a quite erroneous idea of the pathology. The most common primary cause is neglect of foot cleanliness, with a subsequent subacute lateral paronychia. This may be started by the wearing of one pair of tight shoes. The persistent hyperæmia of the lateral side of the nail bed results in uneven growth of the nail, shown by longitudinal ridging and flattening of the nail, so that the nail fold no longer has a smooth rounded surface to overhang. Removal of the nail or improvement of the footwear seldom results in a cure as the nail bed continues its irregular growth, and this is shown by the disappointing results from simple removal of the nail.

It will be seen that the operation suggested though useful in some cases is unsuitable for those with an excessively long first toe, when the shortening of the toe by the removal of the nail bed and part of the terminal phalanx is preferable. In spite of Mr. Nuttall's contempt for sepsis I feel that it is wiser to clean up the paronychia before doing the radical cure. In the long run it saves time as neither operation should lead to much invalidism.

I should like to thank Mr. Nuttall for the dodge of using towel forceps to steady the toes. With the smaller toes this should be even more of an advantage.

Hammersmith, W.6. J. G. BONNIN.

## SACCHARIN SHORTAGE

SIR,—Many of my diabetic patients are unable to obtain saccharin tablets from their local chemists, whereas some of my non-diabetic friends are able to do so. Can some remedy be brought into play to overcome this?

Chelford, Cheshire. E. S. EVANS.

*** Diabetics should arrange with their regular chemists to reserve supplies for them; where there is difficulty they can be assured of preference if they present a note from their doctor.—ED. L.

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FOOD POISONING.—The alarming outbreak of gastro-enteritis which occurred on Thursday of last week among civil servants at Berkeley Square House has been traced to minced meat, the symptoms being probably due to preformed toxin rather than bacterial infection. Some 60 victims taken to St. George's and Westminster Hospitals have now returned to work.

# Obituary

## FRANCIS BERNARD CHAVASSE

M.C., D.M. OXFD, M.R.C.P., D.O.M.S.

Dr. F. B. Chavasse, who was killed in a motor accident near Warwick on July 5, was the third of the four sons of Francis J. Chavasse, formerly bishop of Liverpool. His brother Noel was one of the medical V.C.s of the last war, while Chavasse won his own M.C. in 1917 for his brave but fruitless efforts to find his youngest brother who was reported wounded and missing. His only surviving brother was last year raised to the see of Rochester.

Francis Bernard was born at Oxford in 1889, while his father was principal of Wycliffe Hall. Like his brothers, he went to school at Liverpool College, and when he went up to Balliol in 1908 he showed the family turn for speed by winning the 100 yards in the freshmen's sports. He also proved equal to his brothers' exacting academic standards, and in 1911 he was awarded Theodore Williams scholarships in anatomy and physiology and a Brackenbury exhibition. Two years later he obtained a first class in the final honours school of natural science and returned to Liverpool to finish his medical studies at the university there. He was an enthusiastic yachtsman and when the last war broke out he was away on a cruise. He returned to finish his medical training at top speed, qualifying M.R.C.S. in 1915. He joined the R.A.M.C. at once and served till the end of the war, first in the Dardanelles and later in France. It was not till 1919 that he had leisure to take his B.M. and embark on the study of his chosen specialty. A period of intensive work as clinical assistant at the Oxford Eye Hospital, at the eye department of the London Hospital and at Moorfields followed. Soon after his return to Liverpool he was appointed to the special staff of the Eye and Ear Infirmary and the Royal Liverpool Children's Hospital. He became lecturer in ophthalmology at the University in 1923.

Chavasse was responsible for the seventh edition of Worth's Squint and he had also written important papers on orthoptic training and binocular vision. Indeed one of his colleagues has described squint as the dream child of his brain. His was a strong, thoughtful and thoroughly practical nature with an eager, forward-reaching mind crescive in its scientific curiosity and endeavour. A fellow member of the Twenty Club recalls two papers of his which illustrated the natural balance in his character. "One was a philosophical essay, probing deeply into human experience. A few months later he gave us a paper on camping out, erecting a tent in his drawing-room, and showing to the smallest practical detail how to make a success of a camping holiday. Both papers were entirely in character. To his professional work he brought the same qualities of a sturdy, well-integrated personality."

## JOHN SLIGHT GRAY

M.B. EDIN.

Dr. Gray was born in Edinburgh, and went to George Heriot's School where he secured a place in the rugby XV. At Edinburgh University he played golf for the university team and was awarded his "green." Soon after his graduation in 1939 he went to the Coventry and Warwickshire Hospital as house-physician, later becoming senior resident in charge of the resuscitation wards and an assistant in a department of pathology. Under the supervision of the director of the laboratories he also helped to develop the blood-transfusion service. Dr. Gray had been on duty during all the big raids on Coventry. Earlier on the night of April 8–9 he was seriously injured in his left hand, but he refused to leave his wards. A delayed action bomb exploded later and caused him further injuries which proved to be fatal.

## JOHN PATRICK GORE-GRIMES

M.B. DUBL.

Dr. Gore-Grimes, who was killed in the same raid as Dr. Gray, was a native of Dublin. He was educated at St. Gerard's School, Bray, co. Wicklow, where he became captain of the school in his last year. He loved swimming and yachting and at Trinity College swam for the water polo team. After his graduation in 1939, Dr. Gore-Grimes held resident posts in Dublin and did post-graduate work at the Rotunda. He came to England as house-surgeon at the Birmingham Children's Hospital, and last November moved to the Coventry and Warwickshire Hospital as resident for the senior physician. He was keen, diligent and sincere and his untiring work on the night of April 8 will never be forgotten.

## IVOR McNEIL DRYSDALE

M.B. GLASG.; SURGEON LIEUTENANT R.N.

Surgeon Lieutenant Ivor Drysdale, who has lost his life on active service was the son of Mrs. Drysdale of Golfhill Drive, Glasgow. He was educated at Glasgow High School, and at the University where he graduated M.B. in 1935. He was a member of the university O.T.C. and an enthusiastic cricketer. After qualifying he was for a time a houseman at Glasgow Royal Infirmary before entering the Royal Navy in 1936. For three years he served in stations in the Far East but since the beginning of the war he had been in home waters. He was 29 years of age.

## JOHN ROSSLYN EARP

M.A. CAMB., M.R.C.S., DR.P.H. JOHNS HOPKINS

THE death of Dr. Rosslyn Earp on May 19 at his home in Delmar, New York, severs a transatlantic link. Before qualifying from Cambridge and University College, London, during the last war he had served with an Anglo-Belgian ambulance and gained the Mons medal; the next five years he divided between relief work in France (where he had paratyphoid) and a hectic apprenticeship to medical journalism in London and Geneva, until the progress of a tuberculous lesion compelled attention and he elected to do his curing under Lawrason Brown at Saranac as he had been invited to direct the health department at Antioch College, Ohio. Meantime he took his doctorate at Johns Hopkins and began a public health career which took him from Ohio to California and New Mexico and finally in 1937 to New York where he became director of the division of public health education and brought out weekly the official *Health News*. All this while his lesion was growing on him, but he did not count it as a disability, praising rather the conservation of energy and time when he could summon committees to meet at his bedside. Thus for 20 years of intermittent invalidism he retained the sanguine hopes of youth and was often able to bring them to pass. And it was thus that the sphere of his influence developed from the discussion of adolescent problems at Antioch to the introduction of novel hygienic methods in a Western state, and finally to his advice being sought on large schemes of national health policy. At 50 when he died his mind was still young.

Rosslyn Earp was born in 1891 at Riber, near Matlock (his mother was daughter of Dr. Decimus Hands), and went to Bridlington Grammar School where he was captain of the football XI. Thence to St. John's College, Cambridge, where he was a keen runner and had a cheerful singing voice. His training for the medical O.T.C. certificate turned him into a pacifist; but although a slave of conscience he loved his fellowmen and

this love was returned with interest in whatever grouping he met them. His help in this office at a very lean period was welcome and was followed by a few months of intensive work on *Tubercle* in its first year of publication. His writing was a development of the epistolary style, easy and natural, and he found no occasion to develop mannerisms. Some unsigned letters in our columns have set out vividly one side of the chief medico-political problem in U.S.A. of the last decade. He married Kathleen M. Goodliffe of Nottingham and leaves her with four children.

### WILLIAM HANNA

M.D. BELF., D.P.H.

Dr. Hanna, who died on July 13, was for more than 30 years attached to the Liverpool health service. After taking his M.A. degree at the R.U.I. in 1893 and qualifying in medicine two years later, his professional bent towards the prevention of disease led him to a junior post on the staff of Dr. A. K. Chalmers, then M.O.H. of Glasgow, and then to the government laboratory service in Bombay where he took full advantage of his opportunities to study plague and other tropical diseases and the methods for their suppression. When the rapidly developing sanitary service of the Port of Liverpool called for additional staff his knowledge and experience marked him for appointment. In Liverpool he found full scope, making many suggestions for administrative improvement and the betterment of the conditions, appliances, and sanitation on board ship which were adopted by owners and port authorities and set a standard for the Board of Trade. Seamen everywhere owe to him a large measure of their health, comfort and safety. When in 1923 he succeeded Dr. A. A. Musson as deputy M.O. of the port he became largely responsible for the purity of the city's food-supply. His authority on smallpox was unchallenged and his textbook on the subject had a world-wide circulation. He also collaborated with Hope and Stallybrass in a monograph of industrial hygiene. Moreover as university lecturer in public health administration he helped students to a broad view of state medicine. But his disposition was not of a kind which readily acquires a large area of acquaintances; he was reserved and showed a diffidence almost amounting to shyness. He was a faithful and devoted public servant and his firmest friends were amongst those who knew him best.

## Public Health

### From the Annual Reports

MIDDLESEX

BECAUSE of the death of Dr. John Tate in April, 1940, the 1938 report for Middlesex was not published until April, 1941. As Dr. Macaulay, the present M.O. says, it is now of value more as a record than for information. The race of industry to the North which started roughly a century ago was reversed after the last war. That the shift was not accompanied by the disasters of the industrial revolution is the best certificate of merit which our public hygiene has received. It shows not only that we have learned how to make industry comparatively healthy but that we had gained from the powers controlling it help in applying our knowledge. At the 1921 census the population of Middlesex was 1,253,002; in 1938 it was estimated at 2,058,300; during that year the population increased by 43,800, of which 12,937 came by natural means and 30,863 by immigration. The immigration figures are lower by 50% than those of the previous year and suggest "a check in the flow of population into Middlesex." A population which has been doubled in 20 years, in spite of a birth-rate which had been rapidly falling until near the end of the period, must of necessity be more a collection of persons than a true community, so the vital statistics of Middlesex are not comparable with those of settled counties. Since 1934 the birth-rate has risen steadily from 14·6 to 15·4, but in view of the nature of the population the slightness of this rise denotes a fall in fertility. There are no county boroughs in Middlesex, so the administrative corresponds with the geographical—or rather historical—county. In 1938 there were 31,617 births and 18,680 deaths. The birth-rate varied in the urban districts from 25 in Feltham to 11·4 in Southgate and the recorded death-rates from 11·3 in Sunbury and Hornsey to 6·6 in Potters Bar. The comparability factor varies from 1·36 for Hayes and Harlington to 0·91 for Hornsey, and shifts the highest comparable death-rate to 11·9 in Tottenham but leaves Potters Bar with the laurels at 6·9. Infant mortality varied from 59 in Hayes and Harlington to 31 in Southgate, the average for the county being 45·3. Of the 18,680 deaths only 9184 were of persons over 65. More than half as many (4813) were in persons aged 45–65 and 2873 in persons aged 15–45. In a population of standard composition this would be a bad record in spite of the crude death-rate being 9·1, which comparability raises only to 9·7 against the England and Wales rate of 11·6. The area of Middlesex is 148,691 acres and its density therefore 13·8; it has really ceased to be a county and like London is a vast urban area. Much of Middlesex has been part of the metropolis for many years and the population of these districts has not increased to any extent; that of Tottenham has actually fallen since 1921. The change is in those parts which used to be rural; thus, the population of Wembley increased from 18,239 in 1921 to 118,800 in 1938.

WARWICKSHIRE

Dealing with the increased prevalence of scabies, Dr. Hamilton Wood says that this has been the principal cause requiring admission of evacuees to sick bays. He says it is often contracted from parents or relatives coming from evacuable areas on visits. The increase in detected scabies started nearly two years before the war and was fairly generalised. Its increase has been more rapid since evacuation and has spread to districts from which it had been absent for many years. The incidence of scabies in the general population is unknown, but judging from the records of school medical inspection it appears to have been slight before 1937, even in the crowded parts of great cities. It is difficult to see why the acarus should have extended its range before the war, but easy enough to explain why it has done so since. Among 21,612 children examined in Warwickshire 226 cases of scabies were discovered in 1939, more than twice as many as in 1938. Dr. Wood says that institutional treatment of scabies is successful, but domiciliary treatment protracted and not always satisfactory. There were no cleansing stations in the county last year.

### Infectious Disease in England and Wales

WEEK ENDED JULY 19

*Notifications.*—The following cases of infectious disease were notified during the week: smallpox, 0; scarlet fever, 718; whooping-cough, 4662; diphtheria, 852; paratyphoid, 329; typhoid, 44; measles (excluding rubella), 4610; pneumonia (primary or influenzal), 531; puerperal pyrexia, 132; cerebrospinal fever, 184; poliomyelitis, 10; polio-encephalitis, 4; encephalitis lethargica, 2; dysentery, 85; ophthalmia neonatorum, 88. No case of cholera, plague or typhus fever was notified during the week.

Of the 329 cases of paratyphoid 44 were reported from the county of Chester (Birkenhead 10, Bebington 13); 179 from Lancaster (Bootle 17, Liverpool 78, Manchester 16, St. Helens 19). Of the 44 cases of typhoid 12 scattered cases were also reported from Lancaster. Smaller aggregations of paratyphoid were reported from Northants (Brixworth 14) and Staffs (Stoke 5).

The number of civilian and service sick in the Infectious Hospitals of the London County Council on July 16 was 1377; including scarlet fever, 121; diphtheria, 234; measles 144; whooping-cough, 535; enteritis 18; chicken-pox 45; erysipelas, 40; mumps, 17; poliomyelitis, 1; dysentery, 1; cerebrospinal fever, 30; puerperal sepsis, 10; enteric fevers, 19; german measles, 5; other diseases (non-infectious), 74; not yet diagnosed, 83.

*Deaths.*—In 126 great towns there were no deaths from scarlet fever, 6 (0) from enteric fever, 24 (2) from whooping-cough, 3 (1) from measles, 19 (0) from diphtheria, 35 (1) from diarrhœa and enteritis under 2 years, and 4 (0) from influenza. The figures in parentheses are those for London itself.

Edmonton, Chester, Crosby, Liverpool, Manchester, and Swansea each reported 1 fatal case of enteric fever. Manchester and Sheffield each reported 3 deaths from whooping-cough.

The number of stillbirths notified during the week was 187 (corresponding to a rate of 39 per thousand total births), including 9 in London.

# Medical News

## University of Oxford

On July 19 the following degrees were conferred :—

*B.M.*—C. A. Ridley, P. W. Henderson, David Micklewright, R. G. Graham, D. S. Lewes, Wilfred Barlow, T. E. W. Goodier, Stephen Ormerod, J. M. Yoshimoto, R. V. Young, J. P. Childs, Stella D. Morton, Olive C. Sandys, P. M. Peters,* and J. D. Phibbs.*

* In absence.

Dr. Brian Hickey and Dr. Harland Rees have satisfied the examiners for the degree of master of surgery.

## University of Dublin

At recent examinations at the school of physic, Trinity College, the following were successful :—

M.D.

Alphonsus Dolphin, E. G. Fox, Sheila Kenny, Monty Toohey and J. D. Whiteside.

FINAL MEDICAL EXAMINATION FOR M.B., B.CH., AND B.A.O.

*Medicine.*—G. S. Prince, Maude F. P. Bigger, G. B. Gibson, Gladys M. Byers, Elizabeth D. L. Simpson, T. A. H. Black, S. T. McCollum, Helen S. Watson and Emmeline P. Crowe (*second-class honours*); C. R. Griffin, D. J. Naughton, J. P. Walsh, N. J. Anderson, Harvey Lesselbaum, A. J. B. McFarland, J. P. Hearne, P. C. Smyly, C. W. Lloyd, M. J. M. Solomons, T. J. N. Bates, N. H. Stewart, J. E. Adamson, G. F. Shaw, A. G. Lee and A. C. M. Hobson.

*Surgery.*—S. T. McCollum and C. R. Griffin (*first-class honours*); Helen S. Watson, G. S. Prince, G. B. Gibson, Elizabeth D. L. Simpson and Dorothy H. Webster (*second-class honours*); J. N. Greene, B. W. Wyllie, E. D. Kerr, J. B. Dunlop, Maude F. P. Bigger, J. R. Hassard, T. L. Kelly, D. J. Naughton, Myer Steinberg, Ethna M. MacCarthy, Catherine E. Craig, M. J. M. Solomons, M. E. Weiner, Harvey Lesselbaum, Kathleen M. J. Morphy, P. C. Smyly, W. G. D. Caldwell, H. H. Robinson, T. H. Downes, A. Mc. Russell, Margaret F. Y. Dixon D. R. McCaully, C. E. Williams, A. C. M. Hobson, S. D. Killen.

*Midwifery.*—A. J. B. McFarland, and Florella Starritt (*second-class honours*); C. F. Ford, M. B. Flanagan, E. S. Odbert, J. A. Pearce, Muriel, Eakins, D. H. Draper, F. N. C. Levy, J. C. Watson, M. G. Jackson-Smyth and J. L. Handelman.

D.G.O.—Roshdi Ismail, L. E. Morris, M. A.-L. Musa.

D.P.H.—*Part II.*—William Hayes, F. W. Crook.

## Royal College of Obstetricians and Gynæcologists

At a meeting of the council held on July 26 Prof. W. Fletcher Shaw was re-elected president. The following officers were also elected :—*vice-presidents*, Mr. Eardley Holland and Prof. C. G. Lowry; *hon. treasurer*, Mr. J. P. Hedley; *hon. secretary*, Mr. G. F. Gibberd; *hon. librarian*, Wing-Commander Frederick Roques; and *hon. curator of museum*, Mr. Aleck Bourne.

The following were admitted by the president :—

*Fellowship.*—N. L. Edwards, Derby; W. A. Taylor, Birmingham; and Robert Watson, Northampton.

*Membership.*—Jack Joseph, London.

The following were elected to the membership :—

Gavin Boyd, D. S. Foster, Edward Gledhill, Constance E. Peaker, Kathleen M. Robinson, Katharine C. Rogers, R. X. Sands, Violet E. Augusta Sykes and George Wynn-Williams.

## Beit Memorial Fellowships for Medical Research

Out of the 30 present Beit fellows 13 have already been seconded at their own request for more direct service during the war, and 6 others have undertaken some research work for Government departments on problems arising out of the war. At a meeting of the trustees on July 23 the following elections were made :—

SENIOR FELLOWSHIP

T. R. R. Mann, M.D. Lwow, Ph.D. Camb. To continue his work on intracellular metallo-protein compounds, especially of red blood-cells. At the Molteno Institute of Biology, University of Cambridge.

FOURTH-YEAR FELLOWSHIPS

J. F. Danielli, Ph.D. Lond. To continue his work on the permeability of muscle-fibres and of capillaries. At the biochemical laboratory, University of Cambridge.

Miss C. O. Hebb, Ph.D. McGill. To continue her studies of physiological problems in relation to high altitudes. At the department of physiology, University of Edinburgh.

H. Lehmann, M.D. Basle, Ph.D. Camb. To continue his work on the influence of shock and of the suprarenal glands on glycogen synthesis. At the biochemical laboratory, University of Cambridge.

JUNIOR FELLOWSHIPS

E. F. Gale, Ph.D. Camb. To study bacterial amine production as a cause of non-specific infantile diarrhœa. At the biochemical laboratory, University of Cambridge.

W. Holmes, B.A. Oxfd. To study the regeneration of nerve-fibres after injury. At the department of zoology, University of Oxford.

Miss M. F. Lockett, M.D. Lond., M.R.C.P. To identify renal pressor substances responsible for experimental high blood-pressure. At the pharmacological laboratory, University of Cambridge.

## Royal College of Surgeons of Edinburgh

At a meeting of the college held recently, with Dr. H. M. Traquair, the president, in the chair, the following were admitted to the fellowship :—

F. P. Cameron, M.D. U. Manitoba, Lyra M. de Souza, M.B. Punjab, Kenneth Fraser, M.B. Glasg., J. W. Frost, M.D. McGill, W. J. F. Guild, M.D. St. And., Ethna W. Little, M.B. L'pool, G. E. Moloney, M.B. N.Z., D. M. Morrissey, M.B. N.U. I., K. D. Rao, M.B. Punjab, E. W. Somerville, M.B. Camb., B. G. Spiers, M.B. N.Z., and W. S. Tulloch, M.B. Edin.

## School Medical Services

The Board of Education has already urged the need for economy of medical man-power, and in a further circular (No. 1559) it again asks for the coöperation of local authorities in arranging prudent restrictions. The board regards it as essential that the routine medical inspection of entrants should be kept up, but they suggest that some of the surveys of children now made by doctors might be undertaken by school nurses, who would refer selected cases to the school medical officer. Less highly trained staff might be employed for some of the work, such as inspections for lice, which is usually done by nurses. The board will offer no objection to the employment by authorities of foreign medical practitioners who have obtained temporary registration. Suggestions for the best use of the restricted dental staff are also made in the circular.

# Appointments

BLISS, THEODORE, L.R.C.P. : R.S.O. at the Royal South Hants and Southampton Hospital.

BROWNLIE, M. F., M.B. Glasg. : temp. asst. M.O.H. for Southport.

FIDLER, RACHEL, M.B. Lond. : temp. asst. school M.O. for Berkshire.

FORD, J. C., M.B. Lond. : temp. deputy M.O. for Wembley.

GALBRAITH, D. H. A., M.R.C.S. : examining factory surgeon for Launceston, Cornwall.

HENNEBRY, THOMAS, M.B. Dubl., F.R.C.S.I., D.M.R.E. ; R.S.O. at Alcester Emergency Hospital.

HICKINBOTHAM, P. F. J. : M.B. Birm., F.R.C.S. : R.S.O. at the Royal Infirmary, Bradford.

HOARE, E. A., M.R.C.P.E., D.P.H. : medical superintendent of Nuneaton Emergency Hospital.

LIBMAN, MAURICE, M.D. Lpool. : M.O. to the North-Western Regional Transfusion Service.

PENWILL, MARJORIE, M.B. Lond. : temp. M.O. (maternity and Child Welfare) for Birmingham.

RIDEHALGH, FRANK, M.B. Camb. : deputy clinical T.O. for Leeds.

SMITH, L. M., M.R.C.S. : examining factory surgeon for Eastbourne, Sussex.

WALKER, R. N., M.D. Glasg., D.P.H. : temp. T.O. for Surrey.

# Births, Marriages and Deaths

## BIRTHS

BODEN.—On July 20, the wife of Major Geoffrey Boden, R.A.M.C.—a daughter.

BOYLE.—On July 22, at Leeds, the wife of Mr. T. McMaster Boyle, F.R.C.S.—a daughter.

CAPPS.—On July 19, at Tingewick, Bucks, the wife of F. C. W. Capps, F.R.C.S.—a son.

COOPER.—On July 22, at Princes Risborough, the wife of Dr. Dudley Cooper—a son.

DOWLER.—On July 24, at Gloucester, the wife of Dr. H. G. Dowler—a daughter.

LAWTON.—On July 24, at Ilfracombe, the wife of Captain H. W. D. Lawton, R.A.M.C.—a son.

PETCH.—On July 15, at Woking, to Margaret, wife of Dr. C. P. Petch—a son.

WELLAND.—On July 23, at Wilmslow, the wife of Surgeon Lieutenant M. B. D. Welland, R.N.V.R.—a daughter.

## MARRIAGES

CAMPBELL—BLACK.—On May 20, at Halifax, N.S., Patrick Seymour Grahame Campbell, M.R.C.S., surgeon lieutenant, R.N.V.R., of Rotherham, Yorks, to Doris Helena Black.

ROB—BEAZLEY.—On July 23, in London, Charles Granville Rob, F.R.C.S., to Mary Beazley.

## DEATHS

ANDERSON.—On July 26, at Deal, Charles Alexander Anderson, M.R.C.S., of Sandwich, aged 64.

CAMPBELL FERGUSON.—On July 28, at Wimbledon, Hugh Campbell Ferguson, M.D. Glasg.

DALGLIESH.—On July 27, 1941, at the Red House, Moor Court Close, Sidmouth, John William Dalgliesh, M.D.

FORBES.—On July 25, in London, Duncan Forbes, M.B.E., M.D. Edin., D.P.H., formerly medical officer of health for Brighton.

MORGAN.—On July 23, at Clevedon, Hugh Brooming Taylor Morgan, M.D. Edin., of Cosham, Portsmouth, aged 74.

ROBINSON.—On July 26, in London, Harry Robinson, O.B.E., F.R.C.S.

WEBBER.—On July 25, Leonard Mortis Webber, M.R.C.S., D.P.M., medical superintendent of Netherne Hospital, Surrey aged 55.

# Notes, Comments and Abstracts

## MATERNITY IN WAR-TIME

IN his postscript to the nine-o'clock news on July 15 Mr. Ernest Brown said that over 25,000 babies had now been born in our ninety war maternity homes. The reception of these young citizens is an important piece of civil defence and it is interesting to learn from Dr. A. Leslie Banks and Dr. L. G. Norman, medical officers of the Ministry of Health, how the scheme works in their region.[1] Under the threat of bombing at the beginning of the war 1900 mothers in the last month of pregnancy were evacuated into the area and a hundred maternity units with 1385 beds were hastily established to receive them. But no bombs came, and during the early months of 1940 only six homes with 227 beds were in use. When the real thing began the evacuation of expectant mothers increased, and other homes which had been retained on a care-and-maintenance order were reopened, until by last November the region had twenty-three homes with 673 beds and by the end of the year 5439 mothers had been confined in them.

This war-time organisation has been skilfully and economically grafted on to the peace-time services of the region. Each county and county borough M.O.H. was put in charge of the administration of the homes in his area, the antenatal care of the mothers was put under the welfare authorities, and arrangements with obstetric consultants extended. To avoid overcrowding the regional office retains control of the distribution of the mothers who register with their local M.O.H. or through the L.C.C. Only cases which are expected to be normal are sent to the homes—complicated cases go to a hospital in the area or to a central home where a consultation is available—and the confinements are conducted by midwives, who give gas-and-air if they are qualified to do so. Homes with over 40 beds have a resident medical officer. A matron or sister is in charge of the smaller homes. A local doctor may be summoned if need be and either a member of the county medical staff or a local practitioner has general supervision of the home. Medical students are taught at some of the homes which are staffed by London teaching hospitals and there is a similar arrangement for pupil midwives. It has been difficult to find enough midwives to run the homes and only coöperation of the Central Midwives Board has made it possible to maintain adequate staffs.

Many of the homes are housed in large private houses, which were requisitioned. Extra bathrooms, water-closets, sinks and sluices had often to be installed, but as few alterations as possible were carried out. Though all the homes were in reception areas it was found necessary to provide air-raid protection. The sizes of the homes vary from 15 to 100 beds arranged in 4–6 bed wards; and a floor-space of at least 90 sq. ft. is allowed for each patient. There is one labour bed to 10 lying-in beds; one midwife to 4 patients; one assistant nurse to every 22 patients; and one domestic servant to every 3 patients. Each home has an isolation room where cases of puerperal pyrexia are placed for observation. Septic cases are transferred to an isolation hospital. In each home there is also a day room for up-cases, a nursery for the babies, while a bathroom is often used as a reception-room where patients are examined. Ingenuity and goodwill have reduced costly equipment to a minimum. But though instruments can be sterilised in a fish kettle, dressings are more difficult and where possible they are supplied in drums from a neighbouring hospital. In isolated homes in the early days they were sometimes baked in biscuit tins, but gas or electric autoclaves were installed as soon as possible. Other semi-domestic problems which were solved by individual resource were alternative emergency lighting in labour rooms, adequate exits for stretcher patients in case of need, and disinfection of the inevitable bedpans.

To begin with, the mothers were billeted near the homes before and after their confinements. But as accommodation grew scarcer the need for hostels became clear to the billeting authorities, who indeed sometimes set them up themselves. The welfare authorities have now taken over both antenatal and postnatal hostels (Mr. Brown said there were some sixty of these in the country), and they have proved their worth. The hostels are run on communal lines and the mothers do the light work themselves. A midwife is in charge of the antenatal hostels and in the postnatal hostels the staff is experienced in infant care.

1. *Publ. Hlth*, July, 1941, p. 179.

## A SCIENTIST'S NEW ORDER

IF a book is a great book when it says today what a multitude will be saying tomorrow, when it clearly verbalises thoughts that with most people are only whispering guesses, then the little Pelican book, "The Scientific Attitude," by C. H. Waddington, Sc.D., a Cambridge zoologist of 36, is a great book indeed. Not that it couldn't be better, the chapters on art, for instance, seem to take inordinate space. Not that it couldn't have been written by somebody else, for almost any young scientist could write a similar book and let's hope many will. But it does far more than describe an attitude, it holds up an ideal, it gives a creed which in these days of shifting values looks solid and unsmirched. This is a book not about Science the hired assassin or protector of the state, the mechanic of industry, the servant of big business, the sanitary technician who kills or keeps the fungoid foes of man at bay, but Science with an ideal that is all the better for being minutely dissected, with a conscience which is the more vigorous for being analysed, with a mission and a questing way of life that seeks control. Here is a creed that exalts the last formed and most highly developed faculty of man, a tested creed in lesser fields, an exciting, gripping creed to which youth can turn and not in vain, to which millions in fact are starting to turn, to which millions more will turn when unbridled by Sam Browne belts and instant duty. It does not make the mistake of wanting to form a party, a collection of men and women who always seem to revert to the jealous and egotistical interplay of tribal life with the lowest common denominator output, but to put into universal currency a set of ideas, like fresh air breaking through poison gas, a spirit.

If you are satisfied with things as they are, if you think that business men and lawyers and politicians have done well with this last quarter century, don't buy this book, it might upset you, but if you believe that humanity can rise above the entertainment of world wars, above the mass stupidity of world slumps, above the squirrel hoarding of personal possessions, the protective grouping and hounding of monopolies, the unanalysed bondage of loyalties, then plank your sixpence down like a man and take comfort. A revolution? Certainly, of thought, but the decrees of which would be of such mildness as to ask that anyone who aspires to govern shall have a scientific training, that anyone who would be priest or teacher shall have a summary of what is known of the forming and working of man's body and mind. The writer has little good to say of nazi-ism or communism, but praises other activities of the Soviet which, starting from an incredible scratch, have spent more money on science than any nation at any time, in whose towns "well-stocked scientific technical bookshops are as common as tobacconists in London."

## SCRUPULOUS SATELLITES

THE Board of Registration of Medical Auxiliaries have lately published the third edition of their register of chiropodists and the second edition of their register of orthoptists. The register of chiropodists contains the names of members of four qualifying bodies whose standards of curriculum and examination have been approved by the board: the Incorporated Society of Chiropodists, the British Association of Chiropodists, the Chelsea Chiropodists Association, and the Northern Chiropodists Association. The qualifying body for orthoptists is the British Orthoptic Society. The board also maintains registers of physiotherapists (including masseurs, radiographers, and biophysical assistants) and of dispensing opticians. Medical practitioners, hospitals and local authorities may obtain copies of these registers free on application to the secretary of the board, B.M.A. House, Tavistock Square, London, W.C.1.

Surgeon Rear-Admiral G. F. Syms, F.R.C.S., R.N., has been appointed an honorary surgeon to the King.

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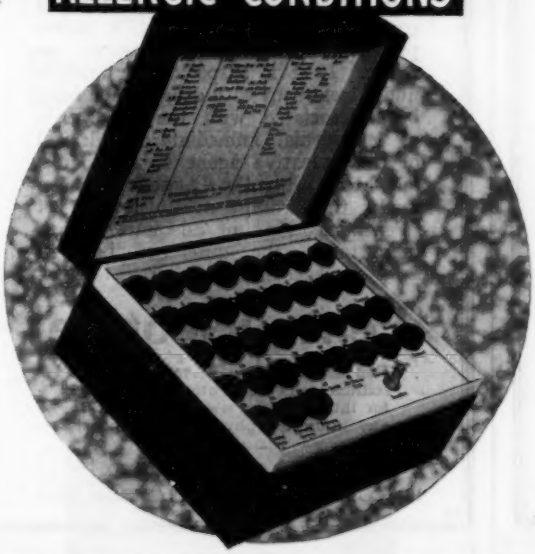

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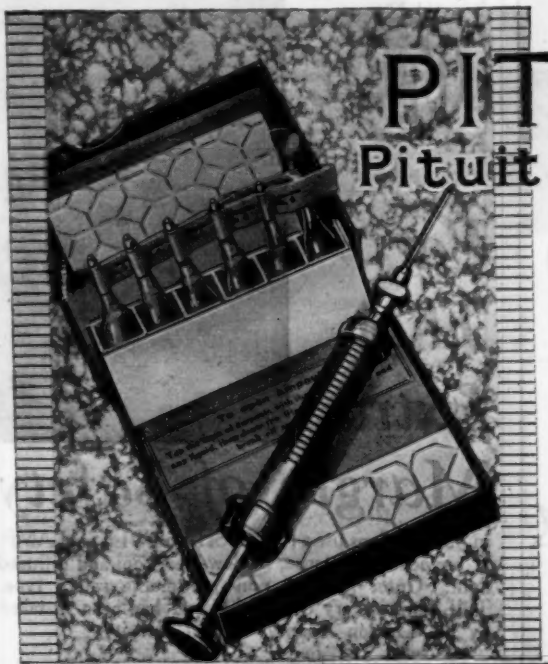

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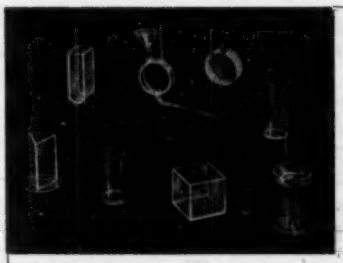

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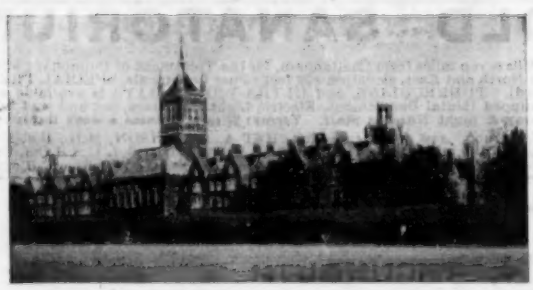

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The Hospital is governed by a COMMITTEE, appointed by the TRUSTEES of the Manchester Royal Infirmary.

In addition to the Main Buildings there are separate villas. Extensive grounds. Hard and grass tennis courts, cricket and croquet grounds, and a court for badminton. There are also wireless installations. Golf may be had within easy distance. Occupational Therapy.

VOLUNTARY, TEMPORARY, AND CERTIFIED PATIENTS received.

The Hospital is nine miles from Manchester, 50 minutes by rail from Liverpool, and 3½ hours from London.

For terms and further particulars apply to the Medical Superintendent, who may be seen in Manchester BY APPOINTMENT. *Telephone: Gatley* 2231 (3 lines).

# CAMBERWELL HOUSE

Telegrams: "PSYCHOLIA, LONDON." 33, PECKHAM RD., LONDON, S.E.5. Telephone: Rodney 4242 (2 lines).

***For the treatment of MENTAL DISORDERS.***

Also completely detached Villas for Mild Cases, with private suites if desired. Voluntary Patients received. Twenty acres of Grounds. Hard and Grass Tennis Courts, Putting Greens, Bowls, Croquet, Squash Rackets, Recreation Hall with Badminton Court, and all indoor amusements, including Wireless and other Concerts, Occupational Therapy, Calisthenics, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths, Operating Theatre, Pathological Laboratory, Dental Surgery, and Ophthalmic Department. Chapel. **Shock and also modified Insulin Therapy.**

Senior Physician: Dr. HUBERT JAMES NORMAN, assisted by a resident Medical Staff, and visiting Consultants.

An Illustrated Prospectus, giving fees which are strictly moderate, may be obtained upon application to the Secretary.

**The Convalescent Branch is Hove Villa, Brighton, and is 200 feet above sea level.**

# THE COTSWOLD SANATORIUM

First opened in 1898 and rebuilt in 1935 on the Cotswold Hills seven miles from Cheltenham, for the Treatment of Pulmonary and all other forms of Tuberculosis. Aspect S.S.W., sheltered from North and East, elevation 800 feet. Pure bracing air, SPECIAL TREATMENT by artificial PNEUMOTHORAX (X-ray controlled). TUBERCULINS, and ULTRA-VIOLET RAYS is available when necessary without extra charge. X-RAY plant, Fully Equipped Dental Department, Electric Light Radiators, hot and cold basins and Wireless in all rooms. Up-to-date drainage. Full day & night Nursing Staff. **Terms: 3½ to 9½ Guineas a week inclusive.**

*Med. Supt.:* GEOFFREY A. HOFFMAN, B.A., M.B., T.C. Dub. *Asst. Phys.:* MARGARET A. HARRISON, M.B., B.S. Lond. *Cons. Laryngologist:* G. N. BARKER, F.R.C.S. Edin., D.L.O. *Cons. Dent. Surgeon:* GEORGE V. SAUNDERS, L.D.S.R.C.S. Lond. *Phone:* 81 & 82 Witcombe. Apply: *The Secretary, The Cotswold Sanatorium, Cranham, Gloucester. Telegrams:* "Hoffman, Birdlip."

# COURT HALL, KENTON, near EXETER

FOR THE TREATMENT OF EIGHT LADIES, VOLUNTARY, TEMPORARY AND CERTIFIED PATIENTS

# CLIFFDEN, TEIGNMOUTH

FOR EARLY AND CONVALESCENT CASES . Recreational Therapies are held daily by skilled Leaders

The house stands high with spacious balconies and extensive views of the South Devon Coast. Beautiful garden. Own Dairy in 25 acres. Private road to beach. There is also a charming house, **EBWORTHY, MANATON, DARTMOOR,** situated in 20 acres, 1100 ft. up for bracing moorland air.

*Resident Physicians*—BERTHA M. MULES, M.D., B.S. ANNE S. MULES, M.R.C.S., L.R.C.P.

Telephones—STARCROSS 259 and TEIGNMOUTH 289

# THE OLD MANOR SALISBURY

*A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.*

Extensive grounds. Detached Villas. Chapel. Garden and Dairy Produce from own farm. Terms very moderate.

**CONVALESCENT HOME AT BOURNEMOUTH** Detached Villas standing in 12 acres of ornamental grounds, with tennis courts, etc., which Voluntary, Temporary or Certified Patients may visit by arrangement for long or short period.

Illustrated Brochure on application to the Medical Superintendent. The Old Manor, Salisbury. Telephone: Salisbury 3216 and 3217.

# RUTHIN CASTLE, NORTH WALES

A Private Clinic, the first in Great Britain, for investigation and treatment of all forms of disease, except infectious and mental

**There is a steel and concrete Air Raid Shelter with heating and a lift to all floors**

Inclusive charges Apply SECRETARY Telephone: Ruthin 66

# THE CASSEL HOSPITAL FOR FUNCTIONAL NERVOUS DISORDERS

**new address: ASH HALL, BUCKNALL, near STOKE-on-TRENT, STAFFS.** *Telephone:* ASH BANK 215

Owing to existing circumstances the hospital has been transferred from Swaylands, Penshurst, Kent, to the above address for the duration of the war. Ash Hall is situated in the country about 5 miles from Stoke in the direction of Ashbourne.

The hospital will continue to admit for treatment patients of moderate means suffering from psychoneurotic illnesses.

Patients suffering from psychotic illnesses are not eligible for admission.

Further particulars may be obtained by application to the Medical Director at the new address.

# PECKHAM HOUSE, 112, Peckham Road, London, S.E.15

**Telegrams: "Alleviated, London"** **Telephone: Rodney 2641-2642**

A Private Mental Hospital, for Ladies and Gentlemen suffering from Nervous and Mental Illness, where the amenities of a comfortable home are combined with full investigation and every well-established modern treatment.

Terms from 3½ guineas weekly.

Illustrated Prospectus may be obtained from the Physician Superintendent.

# CRICHTON ROYAL, DUMFRIES For NERVOUS AND MENTAL DISORDERS

Separate Villa for patients suffering from the effects of alcoholism and drug addiction. Every facility for complete investigation and individual treatment on the most modern lines. Fully equipped gymnasium, golf course, and indoor swimming pool. Specially trained occupational and recreational therapists. **Special Department for Insulin Therapy.** As the hospital is well endowed terms are exceptionally moderate, e.g., First Department from 3 guineas per week, Second Department, 2 and 2½ guineas per week. Voluntary and certified patients are received. Medical Certificates given anywhere in the British Isles are valid for admission of patients. *For prospectus, necessary forms, and further information apply to:—*

Physician Superintendent, P. K. McCowan, J.P., M.D., F.R.C.P., D.P.M., Barrister-at-Law. Tel. Dumfries 1119

# HAYDOCK LODGE, NEWTON-LE-WILLOWS, LANCASHIRE.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES suffering from Mental and Nervous Disorders, Alcoholism and Drug addiction, either voluntarily, temporarily, or under certificate. Patients are classified in separate buildings according to their mental condition. Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT. *'Phone:* Ashton-in-Makerfield 7311. *Tele. Address:* Street, Ashton-in-Makerfield.

# VALE ROYAL ABBEY

## The New Cheshire Home of MUNDESLEY SANATORIUM

This Modernised Mansion, situated in its own beautiful grounds in the heart of Cheshire, has been taken over, equipped and adapted to provide the high standard of treatment always associated with Mundesley Sanatorium—and more than ever necessary in Wartime. Terms from 6½ to 10½ guineas weekly. Tel.: Winsford 3336.

Vale Royal Abbey, Hartford, Cheshire.

Medical and Surgical Staff:
S. VERE PEARSON, M.D. (Cantab.), M.R.C.P. (Lond.)
E. C. WYNNE-EDWARDS, M.B. (Cantab.), F.R.C.S. (Edin.)
GEORGE DAY, M.D. (Cantab.)

# NORTHUMBERLAND HOUSE

GREEN LANES,
FINSBURY PARK, N.4

A PRIVATE HOSPITAL for the treatment of mental and nervous illnesses. Conveniently situated and easy of access from all parts. Six acres of ground facing Finsbury Park. Voluntary and Temporary Patients received without certification. Occupational Therapy, Psychotherapy, and other modern forms of treatment. Air-raid Shelters have been provided.

*Telephone:* Stamford Hill 2688. *Telegrams:* "SUBSIDIARY, LONDON."

For further particulars apply to the MEDICAL SUPERINTENDENT.

# ROYAL EARLSWOOD INSTITUTION
REDHILL, SURREY

For MENTAL DEFECTIVES of all ages

Training under medical supervision. Schools, Farm, Trade Workshops, Recreations. Fees £110 to £375 p.a. Election by votes of subscribers at reduced terms for necessitous trainable cases.

Apply, Secretary. Tel.: Redhill 344

## THE MAGHULL HOMES FOR EPILEPTICS (INC.)
MAGHULL (Near Liverpool)

FARMING and OPEN AIR OCCUPATION for PATIENTS

A few vacancies in 1st and 2nd Class Houses.

FEES:
1st Class (men only) from £3 p.w. upwards.
2nd Class (men and women) 32/- p.w.

*For further particulars apply*
Secretary,
C. EDGAR GRISEWOOD, A.C.A., 29 Exchange St. East, Liverpool

# SPRINGFIELD HOUSE

'Phone: BEDFORD 3417. **Near BEDFORD**
**For Mental Cases with or without Certificates.**
*Ordinary Terms: Five Guineas per week (including Separate Bedrooms for all suitable cases without extra charge).*
For forms of admission, &c., apply to the Resident Physician, CEDRIC W. BOWER.
INTERVIEWS IN LONDON BY APPOINTMENT.

## PORTSMOUTH CITY MENTAL HOSPITAL

Accommodation is provided for the reception of PRIVATE PATIENTS of both sexes in three detached Villas, which are healthily and pleasantly situated in extensive grounds with sea views.

Charges from 3 guineas weekly, including all necessaries except clothing.—Apply to the Medical Superintendent and Resident Physician, THOMAS BEATON, O.B.E., M.D., F.R.C.P.

## HEIGHAM HALL, NORWICH

PRIVATE MENTAL HOME for Nervous and Mental Illness. All forms of treatment available. Fees from 4 gns. per week upwards according to requirements. Vacancies occasionally exist at reduced fees on the recommendation of the patient's own physician.

Apply to Dr J. A. SMALL. Telephone: Norwich 80

## CHISWICK HOUSE,
PINNER, MIDDLESEX.
Telephone: PINNER 234.

A Private Hospital for the Treatment and Care of Mental and Nervous Illnesses in both Sexes.

A modern country house, 12 miles from Marble Arch, in attractive and secluded surroundings. Fees from 10 guineas per week inclusive. Cases under Certificate, Voluntary and Temporary Patients received for treatment.

DOUGLAS MACAULAY, M.D., D.P.M.

28

## MALLING PLACE, KENT

For LADIES and GENTLEMEN of Unsound Mind.

Terms moderate. Apply to Resident Medical Superintendent. Telegrams: ADAM WEST MALLING. Telephone No. 2: MALLING.

## FENSTANTON, at "FIVE DIAMONDS," Chalfont St. Giles, Bucks.

A Private Home for the Care and Treatment of a limited number of LADIES with Mental and Nervous Disorders. Certified, Voluntary, and Temporary Patients received. Mansion with 12 acres of ground. (*See Medical Directory*, p. 2346.) Apply Resident Physician. Telephone: Little Chalfont 2046. Station: Chalfont and Latimer.

## THE GROVE HOUSE,
CHURCH STRETTON, SHROPSHIRE.

Private Home for Ladies mentally ill. Voluntary and Temporary Patients received.

Medical Superintendent: Dr. J. A. MCCLINTOCK.

# UNIVERSITY EXAMINATION POSTAL INSTITUTION
17, RED LION SQUARE, LONDON, W.C.1
Over 50 years' experience

POSTAL AND ORAL COACHING
FOR
ALL MEDICAL EXAMINATIONS

MEDICAL PROSPECTUS (36 pages),
sent gratis, along with List of Tutors, &c., on application to the Principal, 17, Red Lion-square, London, W.C.1. (Telephone: HOLborn 6313.)

## Bolingbroke Hospital, Wandsworth
COMMON, S.W.11.

Applications are invited from registered medical practitioners (Male) for the appointment of HOUSE SURGEON (B2), including R practitioners who now hold A posts. The appointment will be for a period of six months commencing on 1st September. Salary is at the rate of £120 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned on or before the 13th August, 1941.

W. S. RANDOLPH BISS, Secretary-Superintendent.

## The Elizabeth Garrett Anderson HOSPITAL, Euston-road, N.W.1.

Applications are invited for the post of Part-time PATHOLOGIST at a salary of £350 per annum. Duties to commence as soon as possible.

Applications, stating age, qualifications, and experience, with copies of recent testimonials, to be sent to the SECRETARY not later than 12th August.

## Poplar Hospital,
East India Dock-road, Poplar, E.14.

"A" POST.

Applications are invited from registered medical practitioners, Male, for the appointment of a HOUSE SURGEON (A) to become vacant on 31st July, including R practitioners within three months of qualification. If held by an R practitioner, appointment will be for a period of six months. Otherwise it will be for a period of nine months. Salary is at the rate of £200 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned forthwith.

D. H. LINDSAY, House Governor and Secretary.

24th July, 1941.

# HIS MAJESTY'S COLONIAL SERVICE

## THE COLONIAL MEDICAL SERVICE

## VACANCIES FOR MEDICAL OFFICERS

The maintenance of an efficient Colonial Medical Service constitutes a vital part of the national war effort and it is most important that the Service should be assured of an adequate supply of doctors.

The Secretary of State for the Colonies therefore invites applications from doctors possessing a medical qualification registrable in the United Kingdom who are British subjects and who are under thirty-five years of age.

Medical Officers are appointed in the first instance for general service. But there are ample opportunities for work in special branches of medicine and surgery, in public health and in medical research.

The normal salary scale is from £600 to between £1,000 and £1,120. There are large numbers of super-scale posts to which promotion is made on merit and which carry higher salaries.

Government quarters, in many cases free of rent, and first-class passages to and from the Colonies are provided, and an adequate pension scheme is in force.

Selected candidates are normally required to attend a course of instruction in Tropical Medicine and Hygiene either before proceeding overseas or during their first period of leave.

Further particulars, including the regulations governing admission to the Colonial Medical Service, may be obtained from the Director of Recruitment (Colonial Service), 29, Queen Anne's-gate, London, S.W.1.

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## University College Hospital Medical SCHOOL.

(UNIVERSITY OF LONDON.)

Applications are invited from registered medical practitioners for the appointment of FIRST ASSISTANT (B1 post) in the Obstetric Unit at University College Hospital Medical School, the appointment to commence as from 1st November, 1941. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding the diploma of F.R.C.S. Suitably qualified R practitioners holding B2 or B1 appointments are invited to apply. The appointment is for a period of one year in the first instance, and the salary at the rate of £550 per annum, with superannuation benefits under the Federated Superannuation Scheme for Universities.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, and accompanied by copies of three recent testimonials, should be sent to the SECRETARY, University College Hospital Medical School, University-street, W.C.1, not later than Tuesday, 5th August, 1941.

## University College, London.

Applications are invited for the post of TEMPORARY JUNIOR DEMONSTRATOR IN ANATOMY. Salary £250 (candidates possessing medical qualifications £350).

Further particulars may be obtained from the SECRETARY, University College, London, at Stanstead Bury, Stanstead Abbotts, near Ware, Herts.

## Resident Junior Assistant Medical

OFFICER (B2) required by MIDDLESEX COUNTY COUNCIL for HAREFIELD COUNTY SANATORIUM HOSPITAL, HAREFIELD, MIDDLESEX. Applications invited from registered medical practitioners who have held resident appointments in general hospital and also from R practitioners who now hold A posts. Salary £250 per annum. Board, lodging, and laundry. Whole-time duties, such as Council may direct, under supervision of Medical Superintendent. Appointment, subject to medical examination and one month's notice, is for six months with possibility of extension to twelve months (except in case of R practitioners). Post now vacant.

Applications, stating age, qualifications with dates, nationality, present post, and previous appointments, to the undersigned. No application forms provided. Relationship to any member or officer of the Council to be disclosed. Copies of not more than three recent testimonials. Canvassing, directly or indirectly, will disqualify. Closing date 16th August, 1941.

C. W. RADCLIFFE, "B3," Clerk of the County Council.
Middlesex Guildhall, Westminster, S.W.1.

## The Royal Cancer Hospital (Free)

(Incorporated under Royal Charter),
Fulham-road, London, S.W.3.

Applications are invited for the post of Full-time ASSISTANT RADIOLOGIST at the Hospital for the THERAPEUTIC DEPARTMENT.

Applicants must be registered medical practitioners who hold a Diploma in Radiology.

The appointment will be for one year commencing on the 1st September, 1941, at a salary at the rate of £350 per annum.

Applications, to be made on a form which will be supplied by the Secretary, together with three (copies only) recent testimonials, should be sent to the undersigned not later than the first post on Thursday, 14th August, 1941.

CLEMENT COBBOLD, Secretary.

## Forster Green Hospital for

CONSUMPTION AND CHEST DISEASES,
BELFAST.

MEDICAL SUPERINTENDENT wanted. Salary £900 per annum and free house.

Applications, stating age and previous experience, together with copies of testimonials, to be sent on or before 1st September, 1941, to the SECRETARY, 99, Scottish Provident Buildings, Belfast.

## City and County of Newcastle

UPON TYNE.

NEWCASTLE GENERAL HOSPITAL.

APPOINTMENT OF HOUSE SURGEON (A) TO THE OBSTETRICAL AND GYNÆCOLOGICAL DEPARTMENT.

Applications are invited from registered medical practitioners, Male or Female, including R practitioners within three months of qualification, for the appointment of Obstetrical House Surgeon (A), now vacant. The appointment is tenable for a period of six months. Salary is at the rate of £200 per annum, with full residential emoluments.

Previous experience of Obstetrics and Gynæcology is desirable, and in addition to duties in the Maternity Unit (31 Beds), and in the Gynæcological Ward, the successful applicant may be required occasionally to carry out duties at one of the Antenatal Clinics in the City.

Applications, stating age, qualifications with dates, nationality, and present post, and accompanied by copies of three recent testimonials, should be sent to the MEDICAL OFFICER OF HEALTH, Health Department, Town Hall, Newcastle upon Tyne, 1, immediately, stating earliest date on which the appointment could be taken up.

## University of Bristol and

CITY AND COUNTY OF BRISTOL.

APPOINTMENT OF JUNIOR RESIDENT OBSTETRIC OFFICERS (A).

Applications are invited from registered medical practitioners, Male and Female, for the appointment of Junior Resident Obstetric Officers (A) at SOUTHMEAD MUNICIPAL HOSPITAL, to become vacant on the 1st September, 1941, including R practitioners within three months of qualification. If held by an R practitioner, appointment will be for a period of six months. Salary at the rate of £200 per annum, with full residential emoluments. Southmead Hospital Maternity Department is the teaching hospital for Obstetrics in the University of Bristol.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned not later than the 15th August, 1941.

R. H. PARRY, Medical Officer of Health.
Kenwith Lodge, Westbury Park, Bristol, 6.

## Monmouthshire County Council.

AIR RAID PRECAUTIONS SCHEME.

Wanted, a duly registered medical practitioner as an ASSISTANT A.R.P. MEDICAL OFFICER, who must be either (1) over forty years of age, or (2) if under forty years of age, not liable to military service. The appointment will be full time and of a salary of £600 per annum, with travelling expenses in accordance with the Council's scale. The successful candidate will be attached to the Department of the County Medical Officer and will be under his general direction and supervision.

Conditions of duty may be had from the undersigned, to whom applications, stating age, experience in general medical work and A.R.P., should be sent to reach him not later than first post on 15th August, 1941.

VERNON LAWRENCE,
Clerk to the Council, and County A.R.P. Controller.
County Hall, Newport, Mon., 28th July, 1941.

## Preston and County of Lancaster Royal

INFIRMARY, PRESTON.

CASUALTY OFFICER (B2) required immediately to take charge of large Casualty Department—Class 1A Hospital. Six months' appointment. R practitioners, including those now holding A posts, are invited to apply. Salary at the rate of £175 per annum, with the usual residential allowances.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copy testimonials, to be forwarded to Mr. JOHN GIBSON, Superintendent, Royal Infirmary, Preston.

## County Borough of Newport.

APPOINTMENT OF TEMPORARY ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the position of Temporary Assistant Medical Officer of Health at a salary of £500 per annum.

Candidates must be registered medical practitioners and preference will be given to one possessing a Diploma in Public Health.

The appointment is a whole-time one and the qualifications for the position should include experience in maternity and child welfare work, school medical work, and orthopædics.

The person appointed will be required to work under the immediate supervision of the Lady Medical Officer in charge of the Maternity and Child Welfare Department, and furthermore will be expected to carry out such additional duties as may from time to time be imposed upon him/her by the Medical Officer of Health of the Corporation, to whom he/she will be directly responsible. He/she will be required to contribute to a superannuation fund (the contributions to be refunded at the termination of the appointment). The appointment is terminable on two months' notice on either side.

Applications, in the candidate's own handwriting on special forms to be obtained from this office, must be forwarded to the undersigned not later than the first post on 16th August, 1941, and should be accompanied by copies of three recent testimonials.

H. W. CATTO, Medical Officer of Health.

Health Department, Royal Chambers, High-street, Newport, Mon., 26th July, 1941.

## Addenbrooke's Hospital, Cambridge.

APPOINTMENT OF HOUSE OFFICER TO THE EXAMINATION HALLS ANNEXE (A).

Applications are invited from registered medical practitioners (unmarried), Male and Female, for the appointment of House Officer to the Examination Halls Annexe (A) (100 Beds) to become vacant on 17th September, 1941, including R practitioners within three months of qualification. The appointment will be for a period of six months, but is terminable at an earlier date by one month's notice on either side. Salary is at the rate of £130 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned not later than Wednesday, 13th August.

J. A. BEARDSALL, Secretary-Superintendent.

## Addenbrooke's Hospital, Cambridge.

APPOINTMENT OF RESIDENT ANÆSTHETIST (A).

Applications are invited from registered medical practitioners (unmarried), Male and Female, for the appointment of Resident Anæsthetist (A), including R practitioners within three months of qualification. The appointment will commence on 19th September, 1941, and is for a period of six months, but is terminable at an earlier date by one month's written notice on either side. Salary is at the rate of £130 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned not later than Wednesday, 13th August, 1941.

J. A. BEARDSALL, Secretary-Superintendent.

## City of Liverpool.

OLIVE MOUNT CHILDREN'S HOSPITAL. (400 Beds.)

APPOINTMENT OF RESIDENT ASSISTANT MEDICAL OFFICER (FEMALE) (B2).

Applications are invited from registered medical practitioners (Female) for the appointment of Resident Assistant Medical Officer (B2) at the Olive Mount Children's Hospital. The appointment will be for a period of six months and experience in infectious diseases and diseases of infants is desirable. The salary is at the rate of £250 per annum, with full residential allowances. All fees in connexion with the appointment to be handed over to the City Council. The appointment will be made in accordance with the standing orders of the City Council and will be determinable by one calendar month's notice on either side.

Applications, upon forms obtainable from the Medical Officer of Health, Hospitals Department, Gordon House, Belmont-grove, Liverpool, 6, to be endorsed "Resident Medical Officer" and returned to the undersigned so as to be received not later than 10 A.M. on Monday, 11th August, 1941.

W. H. BAINES, Town Clerk.

Municipal Buildings, Dale-street, Liverpool, 2, July, 1941.

## The Robert Jones and Agnes Hunt

ORTHOPÆDIC HOSPITAL, OSWESTRY.
(Beds: Adults, 280; Children, 120.)

Applications are invited from registered medical practitioners, including R practitioners who now hold A posts, for a HOUSE SURGEON (Male) (B2), required to commence duties as soon as possible. Appointment for six months with possibility of extension, except in the case of R practitioners, when appointment will be limited to six months. Salary at the rate of £200 per annum, with board, residence, and laundry. Two weeks' holiday for each six months' service.

Applications, stating age, qualifications, and experience, with copies of three recent testimonials, to be addressed to the SECRETARY-SUPERINTENDENT.



## Herefordshire County Council.

COUNTY COUNCIL HOSPITAL AND M.S. ANNEXE, HEREFORD. (476 Beds.)

Applications are invited from suitably qualified and experienced registered medical practitioners for the following appointments at the above Hospital:—

(1) ASSISTANT MEDICAL OFFICER (B1) at £350 per annum, plus full residential emoluments. Suitably qualified R practitioners holding B2 or B1 posts may apply;

(2) HOUSE OFFICER (B2) at £200 per annum, plus full residential emoluments. Suitably qualified R practitioners holding A posts may apply when appointment will be limited to six months.

Duties will be mainly medical but good general hospital experience is obtainable.

Applications should be sent to the undersigned by Saturday, the 9th August, 1941.

W. OGILVY REID, Medical Superintendent.

## Bootle General Hospital

Linacre-lane, BOOTLE, LIVERPOOL, 20.
(123 Beds.)

CASUALTY OFFICER.

Applications are invited from registered medical practitioners, Male and Female, for the above A appointment, including R practitioners within three months of qualification. Appointment is for the period ending 31st December, 1941, and salary at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned immediately.

A. J. COOPER, Secretary-Superintendent.

## Hampshire County Council.

THE COUNTY COUNCIL HOSPITAL, ALTON.

RESIDENT HOUSE OFFICER (Male or Female) required at this Hospital at a salary of £150 per annum (A post). R practitioners within three months of qualification may apply when appointment will be for a period of six months.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three testimonials, should be sent to the undersigned as soon as possible.

H. LESLIE CRONK, County Medical Officer.

The Castle, Winchester.

## The Kidderminster and District General

HOSPITAL. (145 Beds normal.)

Applications are invited from medical practitioners, Male and Female (including R practitioners who now hold A posts), for the post of SENIOR HOUSE SURGEON (B2) to commence duties immediately. If held by an R practitioner the appointment will be for a period of six months. The salary is at the rate of £150 per annum, plus £25 war bonus.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned at once.

C. M. SMITH, House Governor and Secretary.

## Pontefract General Infirmary and

THE HYDES HOSPITAL. (112 Beds.)

HOUSE SURGEON (A).

Applications are invited from registered medical practitioners, Male, for the appointment of a House Surgeon (A), to become vacant immediately, including R practitioners within three months of qualification. If held by an R practitioner, appointment will be for a period of six months. Salary £150 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned.

D. J. RICHARDS, Secretary-Superintendent.

## Royal Berkshire Hospital, Reading.

Applications are invited from registered medical practitioners (Male) for the appointment of RESIDENT ANÆSTHETIST (B2) to become vacant on 1st September, 1941, including R practitioners who now hold A posts. The appointment is for six months. A salary of £250 per annum, with board, residence, and laundry, will be paid to the candidate possessing suitable qualifications for the post.

Applications, stating age, qualifications with dates, nationality, and present post, and accompanied by copies of three recent testimonials, should be sent to the undersigned immediately.

H. E. RYAN, Secretary and House Governor.

## The Royal Cripples Hospital,

BIRMINGHAM.

(337 Beds for Acute Cases, including a proportion of patients suffering from Tubercular Bone Disease, and large Out-patient Department.)

Applications, which should be addressed to the SECRETARY, 80, Broad-street, Birmingham, 15, are invited from registered medical practitioners, including suitably qualified R practitioners holding A posts when appointment will be limited to six months, for the appointment of RESIDENT HOUSE SURGEON (B2), vacant early September, 1941. Resident salary £200 per annum.

# County Borough of Oldham.

PUBLIC HEALTH AND MATERNITY AND CHILD WELFARE DEPARTMENTS.

Applications are invited from registered medical practitioners of either sex for the appointment of ASSISTANT MEDICAL OFFICER, at a salary of £600 per annum, rising by annual increments of £25 to £700 per annum, plus war bonus which at present amounts to £24 per annum.

The duties will be almost entirely in connection with the Maternity and Child Welfare Service and will include attendance at the Ante-Natal and Children's Clinics. The Officer appointed will also be required to undertake duties in connection with the Ante-Natal Clinics and Maternity Service of the Municipal Hospital and the Municipal Midwifery Service.

Preference will be given to applicants who have had considerable experience in work with mothers and children, including six months' resident post at a Maternity Hospital and in a Children's Hospital.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination. The maximum age for new entrants to the Corporation service is 45 years. The person appointed will be required to reside within the borough.

The Officer appointed will not be allowed to engage in private practice or consulting practice, but will be required to devote the whole of his/her time to the duties of the Council.

Forms of application and conditions relating to appointments should be obtained from the Medical Officer of Health, Town Hall, Oldham, and returned to him, together with copies of not more than three recent testimonials, on or before the 20th August, 1941, endorsed "Assistant Medical Officer."

22nd July, 1941. THOMAS ALKER, Town Clerk.

# City of Lincoln.

CITY HOSPITAL AND SANATORIUM.

APPOINTMENT OF MALE RESIDENT MEDICAL OFFICER.

Applications are invited from Male registered medical practitioners for the appointment of Resident Medical Officer (B1) at the City Hospital and Sanatorium, for a period of twelve months. Single quarters only provided. Salary £300 per annum, plus war bonus, with board, residence, and laundry. Experience in the treatment of tuberculosis and infectious diseases desirable. Practitioners holding B1 or B2 posts are also invited to apply.

Forms of application and further particulars of appointment may be obtained from M. L. Bery, Medical Officer of Health, City Health Department, Beaumont Fee, Lincoln, and must be returned not later than 11th August, 1941.

G. H. BANWELL, Town Clerk.

Town Clerk's Office, Lincoln, 21st July, 1941.

# Royal United Hospital, Bath.

RESIDENT APPOINTMENTS.

Applications are invited from registered medical practitioners, including R practitioners within three months of qualification, for the following A appointments, which become vacant on the dates stated:—

HOUSE SURGEON (Gynæcology, Obstetrics, and Anæsthetics), now vacant.

HOUSE SURGEON (General Surgery and Ear, Nose, and Throat), 1st September.

HOUSE SURGEON (General Surgery), 1st September.

Salaries at the rate of £150 per annum, with board, residence, and laundry. If held by R practitioners, appointments will be for a period of six months.

Applications (clearly indicating the post desired), stating age, qualifications, and experience, together with a copy of three testimonials, to be addressed to the undersigned immediately.

J. LAWRENCE MEARS, Secretary-Superintendent.

21st July, 1941.

# Rochdale Infirmary and Dispensary.

LANCS. (110 Beds.)

APPOINTMENT OF HOUSE SURGEON (A).

The Board of Management invites applications for the appointment of House Surgeon (A), appointment now vacant, including R practitioners within three months of qualification. If held by an R practitioner, appointment will be for a period of six months. Salary attached to the appointment is at the rate of £150 per annum, including board, residence, and laundry.

Applications, stating age, nationality, &c., together with copies of three recent testimonials, to be sent to the Secretary.

The successful candidate must be a member of a medical defence society.

W. WYNNE, Secretary.

Infirmary Office, Rochdale.

# Children's Hospital, Nottingham.

Applications are invited for the post (B1) of ASSISTANT HOUSE PHYSICIAN (Woman). Experience in anæsthetics desirable. The salary will be at the rate of £200 per annum, with apartments, board, and laundry. The appointment will be for six months, duties to commence forthwith.

Applications, together with testimonials, stating age, nationality, qualifications, and experience, to be sent to the HONORARY SECRETARY, 1, King John's Chambers, Bridlesmith Gate, Nottingham, on or before Tuesday, 5th August, 1941. Selected candidates will be required to attend at the Hospital for a personal interview.

# Corporation of Aberdeen.

TEMPORARY ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited for the post of Temporary Assistant School Medical Officer at a salary of £500 per annum, rising by annual increments of £25 to £700 per annum. Candidates must be registered medical practitioners of at least three years' standing, and preference will be given to holders of the Diploma in Public Health. The duties of the office are primarily in connexion with the medical inspection, &c., of school-children.

Applicants should be under forty years of age.

The appointment is subject to the provisions of the Local Government Superannuation (Scotland) Act, 1937, and the successful candidate will require to pass a medical examination. The officer appointed will be required to devote his/her whole time to the duties of the office, will act under the direction of the Medical Officer of Health and School Medical Officer, and will be subject to the conditions of service laid down by the Corporation from time to time.

Conditions of the appointment, together with form of application, may be obtained from the undersigned, with whom applications, endorsed "Temporary Assistant School Medical Officer," should be lodged not later than 11th August, 1941.

HARRY J. RAE, Medical Officer of Health.

Public Health Department, 4, Albyn-place, Aberdeen.

# Preston and County of Lancaster

QUEEN VICTORIA ROYAL INFIRMARY.
(Class 1A Hospital. 404 Normal Beds.)

Applications are invited from registered medical practitioners holding the necessary qualifications for the post of RESIDENT ANÆSTHETIST (B2) which will become vacant in September next, including R practitioners who now hold A posts.

The possession of the Diploma in Anæsthetics would be an advantage, but is not compulsory. The salary will be at the rate of £175 per annum, but a higher figure will be paid to a successful applicant who holds the Diploma.

The post of Assistant Medical Officer to the Venereal Diseases Department, which entails attendance at three late afternoon clinics, the salary for which is at the rate of £100 per annum, can be attached to the first-named post if desired.

If held by an R practitioner the appointment will be for a period of six months; in other cases the appointment will be for twelve months in the first instance.

Applications, stating age, nationality, qualifications, and experience, to be forwarded to Mr. JOHN GIBSON, J.P., F.H.O.A., Superintendent, Royal Infirmary, Preston.

# City and County of Newcastle upon TYNE.

NEWCASTLE GENERAL HOSPITAL. (900 Beds.)
SHOTLEY BRIDGE HOSPITAL. (300 Beds.)

(1) APPOINTMENT OF HOUSE PHYSICIANS (A) AND HOUSE SURGEONS (A).
(2) APPOINTMENT OF SPECIAL HOUSE SURGEON (A) TO THE NEUROSURGICAL DEPARTMENT, SHOTLEY BRIDGE HOSPITAL.

Applications are invited from registered medical practitioners for the above appointments, including R practitioners within three months of qualification. The appointments will be tenable for a period of six months. Salary £150 per annum, together with the usual residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of two recent testimonials, should be forwarded immediately to the MEDICAL OFFICER OF HEALTH, Health Department, Town Hall, Newcastle upon Tyne, 1.

Owing to the fact that the permitted establishment of refugee practitioners at both the Hospitals is already complete, it is regretted that applications for above appointments from refugee practitioners cannot be considered.

# The Royal Hospital, Wolverhampton.

(Incorporated under Royal Charter.)
(310 Beds.)

Applications are invited from registered medical practitioners, including R practitioners within three months of qualification, for the following post: HOUSE SURGEON (GENERAL SURGERY) (A), vacant 1st August, 1941. Salary at the rate of £100 per annum, with full residential emoluments. The appointment is for six months.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned immediately.

W. H. HARPER, House Governor.

Wolverhampton, 17th July, 1941.

# Royal Cornwall Infirmary, Truro.

(229 Beds.) Three residents.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE PHYSICIAN (B2), in charge of the Medical Eye, Ear, Nose and Throat Department, including R Practitioners who hold A posts and who have not completed a five months' tenure of those posts. If held by an R Practitioner the appointment will be limited to six months. The salary is at the rate of £200 per annum with full residential emoluments. Applications, stating age, qualifications with dates, nationality and present post and accompanied by copies of three recent testimonials, should be sent to the undersigned. W. E. GRENFELL, Hon. Secretary.

Truro, 22nd July, 1941.

## Lancashire County Council.

The Lancashire County Council propose to appoint a Whole-time TEMPORARY ASSISTANT COUNTY MEDICAL OFFICER and invite applications from registered medical practitioners who should possess a Diploma in Public Health.

The duties of the post include the medical inspection of school-children, maternity and child welfare work, general public health work, and such other duties as may from time to time be imposed by the County Council.

The salary will be at the rate of £800 per annum, together with allowances for travelling, &c.

Applications must be made upon a form which can be obtained, together with further particulars, from the County Medical Officer of Health, School Medical and Child Welfare Department, County Offices, Preston, to whom the completed forms should be returned not later than the 16th August, 1941. All communications must be endorsed "Assistant County Medical Officer."

Any form of canvassing is strictly forbidden and will disqualify.

GEORGE ETHERTON, Clerk of the County Council.

County Offices, Preston, July, 1941.

## The Royal Liverpool United Hospital.

ROYAL SOUTHERN HOSPITAL.

Applications are invited from registered medical practitioners for the B1 post of ORTHOPÆDIC REGISTRAR at the Royal Southern Hospital, duties to commence immediately. Suitably qualified R practitioners holding B2 or B1 appointments are invited to apply. Salary is at the rate of £100 per annum.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, should be sent to the undersigned not later than Tuesday, 12th August, 1941.

Testimonials are not required from students of the Liverpool Medical School.

A. V. J. HINDS, Secretary.

The Royal Liverpool United Hospital, St. Katharine's College, Taggart-avenue, Liverpool, 16,
2nd August, 1941.

## Worcester Royal Infirmary.

Applications are invited from registered medical practitioners for the appointment of HOUSE SURGEON (A), including R practitioners within three months of qualification. If held by an R practitioner the appointment will be for a period of six months. Salary is at the rate of £120 per annum, with full resident emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned not later than 7th August, 1941. H. J. CLOUT, Superintendent-Secretary.

## County and City of Perth Royal INFIRMARY.

APPOINTMENT OF A HOUSE SURGEON (A).

Applications are invited from registered medical practitioners (Male) for the appointment of a House Surgeon (A), to become vacant on 1st September, 1941. If the person appointed is an R practitioner, the appointment will be for a period of six months. Salary is at the rate of £100 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates and nationality, accompanied by copies of three recent testimonials, should be sent to the Administrative Medical Officer as soon as possible. R practitioners who have been qualified for more than three months must have obtained the sanction of the Scottish Central Medical War Committee to their applications.

ARNOLD TUNSTALL, Secretary and Treasurer.

## Walsall General Hospital.

(181 Beds.)

Applications are invited from registered medical practitioners (including R practitioners holding A posts) for the appointment of RESIDENT HOUSE PHYSICIAN (B2). The appointment will be for six months. Salary at the rate of £175 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, nationality and present post, should be accompanied by copies of three testimonials and sent to the undersigned as soon as possible.

R. C. MILLWARD, House Governor.

29th July, 1941.

## Stamford, Rutland and General INFIRMARY.

APPOINTMENT OF A HOUSE OFFICER (A).

Applications are invited from registered medical practitioners, Male or Female, for the appointment of a House Officer (A) to become vacant on 18th August, 1941, including R practitioners within three months of qualification. If held by an R practitioner, appointment will be for a period of six months. Otherwise it will be for a period of three months. Salary at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned not later than 16th August, 1941.

H. F. DONALD, Secretary-Superintendent.

## County Borough of Middlesbrough.

ASSISTANT MEDICAL OFFICER OF HEALTH, MATERNITY AND CHILD WELFARE

The Middlesbrough Corporation invite applications from registered medical practitioners (Women) for the appointment of Assistant Medical Officer of Health, Maternity and Child Welfare.

Applicants must have had experience in antenatal work, midwifery, and diseases of children, with not less than three years' postgraduate experience.

Commencing salary will be at the rate of £350 per annum, with residence, board, and laundry, valued at £150, making £500 in all, and rising, subject to satisfactory service, by annual increments of £25 to a maximum of £700. The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, and to the regulations governing conditions of service made by the Middlesbrough Corporation. The successful candidate will be required to pass a medical examination.

The successful candidate will be required to reside at the Municipal Maternity Hospital, and to devote the whole of her time to the duties of the office, and to act under the direction of the Medical Officer of Health.

Applications, stating age and experience, together with copies of three recent testimonials, must be sent to the Medical Officer of Health, Municipal Buildings, Middlesbrough, on or before 23rd August, 1941.

PRESTON KITCHEN, Town Clerk.

Municipal Buildings, Middlesbrough, 26th July, 1941.

## County Borough of Middlesbrough.

DEPUTY MEDICAL OFFICER OF HEALTH.

The Corporation of Middlesbrough invite applications from duly qualified medical men under the age of forty years and of not less than three years' standing in their profession, for the post of Deputy Medical Officer of Health. A Diploma in Public Health is essential.

The salary will be at the rate of £750 per annum, rising by four annual increments of £25 to a maximum salary of £850, plus such car allowance as may be from time to time decided by the Council. The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and the Council's conditions of service governing the appointment of permanent staff, and the successful candidate will be required to pass a medical examination.

The appointment will be subject to the regulations governing salaries and conditions of service of the administrative, technical, and clerical staffs of the Town Council so far as they are applicable.

The successful candidate will be required to devote the whole of his time to the duties of the office, which may include duty in any section of the Health Services of the Borough, and he will act under the directions of the Medical Officer of Health. He will also be required without additional remuneration to act as Deputy Medical Officer of the River Tees Port Health Authority.

Applications, accompanied by copies of not more than three recent testimonials, must be received by the Medical Officer of Health, Health Department, Municipal Buildings, Middlesbrough, not later than the 23rd August, 1941.

PRESTON KITCHEN, Town Clerk.

Municipal Buildings, Middlesbrough, 26th July, 1941.

## The Royal Liverpool Children's HOSPITAL, Myrtle-street, LIVERPOOL, 7.

The Committee invite applications for the posts of SURGICAL REGISTRAR (B1) for twelve months from August, 1941, and MEDICAL REGISTRAR (B1) for twelve months from August, 1941. Suitably qualified R practitioners holding B2 or B1 posts may apply. Salary in each case at the rate of £125 per annum.

Further particulars may be obtained from the SECRETARY of the Hospital, to whom applications should be sent, with copies of recent testimonials, by an early post.

## Liverpool Eye, Ear and Throat INFIRMARY, Myrtle-street, LIVERPOOL, 7.

TEMPORARY HONORARY ASSISTANT OPHTHALMIC SURGEON.

Applications are invited for the appointment of Temporary Honorary Assistant Ophthalmic Surgeon to the above Infirmary for the duration of war. The appointment includes attendance at the Out-patient Clinics at 1.30 P.M. on Monday and Thursday afternoons.

Applications, together with copies of three recent testimonials, to be sent to the undersigned not later than Thursday, 7th August, 1941.

24th July, 1941. W. LEAR, Secretary.

## Birmingham and Midland Hospital FOR WOMEN.

Applications are invited from registered medical practitioners (Male and Female) for the appointment of HOUSE SURGEON (B2), including R practitioners who now hold A posts. The appointment is for six months from 1st September, 1941. Salary to be at the rate of £100 per annum.

Applications, with full particulars and copies of testimonials, to be sent immediately to HUGH C. ASTON, C3, Kenilworth-court, Hagley-road, Birmingham, 16.

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## Kent and Sussex Hospital,
ROYAL TUNBRIDGE WELLS.

APPOINTMENT OF RESIDENT HOUSE PHYSICIAN.

Applications are invited from registered medical practitioners, Male, for the appointment of Resident House Physician (B2), to become vacant shortly, including R practitioners who hold A posts, when the appointment will be limited to six months. The salary is at the rate of £200 per annum, with full residential emoluments. Applications, stating age, qualifications with dates, nationality, and present post, and accompanied by copies of three recent testimonials, should be sent to the undersigned immediately.

TOM B. HARRISON, Superintendent-Secretary.

28th July, 1941.

## Kent and Sussex Hospital,
ROYAL TUNBRIDGE WELLS. (534 Beds.)

APPOINTMENT OF RESIDENT HOUSE SURGEON AND CASUALTY OFFICER (B2).

Applications are invited from registered medical practitioners (Male) for the appointment of House Surgeon and Casualty Officer (B2), to become vacant immediately, including R practitioners who hold A posts and who have not completed a five months' tenure of those posts. If held by an R practitioner, appointment will be limited to six months. The salary is at the rate of £200 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, nationality, and present post, and accompanied by copies of three recent testimonials, to be sent to the undersigned as soon as possible.

TOM B. HARRISON, Superintendent-Secretary.

## Grimsby and District Hospital.

APPOINTMENT OF RESIDENT CASUALTY OFFICER (B2).

Applications are invited from registered medical practitioners, including R practitioners who hold A posts, for the appointment of Resident Casualty Officer (B2) vacant on June 30th, 1941. If held by an R practitioner the appointment is limited to six months. Salary is at the rate of £175 per annum, with residential emoluments.

Applications, stating age, qualifications with dates, nationality, and present post, and accompanied by three recent testimonials, should be sent to the undersigned at once.

July 21st, 1941. H. B. COATES, Secretary-Superintendent.

## York County Hospital.
(222 Beds.)

Applications are invited from registered medical practitioners, including R practitioners within three months of qualification, for the appointment of a HOUSE PHYSICIAN (A), to become vacant on 1st September. If held by an R practitioner, appointment will be for a period of six months. Salary is at the rate of £175 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned not later than 6th August. J. R. MACKRILL, Secretary.

## County Borough of Preston.

SHAROE GREEN HOSPITAL (250 Beds).

JUNIOR RESIDENT MEDICAL OFFICER (FEMALE) A.

Applications are invited from fully qualified and registered practitioners for the above appointment. Salary at the rate of £150 per annum. The appointment will be for a period of six months.

Applications, stating age, qualifications, experience and nationality, together with copies of three recent testimonials, should be forwarded to the MEDICAL SUPERINTENDENT, Sharoe Green Hospital, Fulwood, Preston.

## Huddersfield Royal Infirmary.
(321 Beds.)

Male HOUSE SURGEON (an A appointment) required to be attached to the Abnormal Maternity Department. Duties, to commence immediately, include the administration of anæsthetics. Salary will be at the rate of £150 per annum, with board, residence, and laundry.

Appointment for six months, subject to renewal for a similar period. If held by an R practitioner the appointment will be limited to six months.

R practitioners within three months of qualification may apply.

Applications, with copies of three recent testimonials, to be addressed to the undersigned.

H. J. JOHNSON, General Superintendent and Secretary.

## The Children's Hospital, Sheffield (Inc.)
(157 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a HOUSE PHYSICIAN (A), vacant on the 1st August, 1941, including R practitioners within three months of qualification. Appointment is for a period of six months. Salary at the rate of £100 per annum, with full residential emoluments.

Applications, stating age, qualifications, with dates and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned.

T. H. G. GARTLAND, Superintendent and Secretary.

## Swansea General and Eye Hospital.

Applications are invited from registered medical practitioners for the post of RESIDENT ANÆSTHETIST (B2) including R practitioners who now hold A posts. If held by an R practitioner, the appointment will be limited to six months, otherwise it will be for a period of twelve months. Duties to commence 18th August. The salary is at the rate of £150 per annum for the first six months and £200 per annum for the second six months, with full residential emoluments.

Applications, stating age, qualifications with dates, nationality and present post and accompanied by copies of three recent testimonials, should be forwarded to the undersigned.

29th July, 1941. O. C. HOWELLS, Secretary-Superintendent.

## Doncaster Royal Infirmary.

Applications are invited from registered medical practitioners, including R practitioners within three months of qualification, for a HOUSE SURGEON (Male) (A appointment), required immediately. The appointment is for six months. Salary at the rate of £175 per annum, with residence, board, and laundry. This large industrial area offers excellent opportunities for gaining experience.

Applications, accompanied by not more than three testimonials, to be sent to the undersigned immediately.

R. LANCASTER, Secretary-Superintendent.

## North Staffordshire Royal Infirmary,
STOKE-ON-TRENT.
(Normally 472 Beds. Class 1A.)

Applications are invited from registered medical practitioners, Male and Female, including R practitioners within three months of qualification, for the post of CASUALTY OFFICER A.

The appointment will be for a period of six months. Salary at the rate of £150 per annum with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, accompanied by copies of three recent testimonials, should be sent to the undersigned as soon as possible.

THORNBURROW GIBSON, Secretary and House Governor.

## Royal Hampshire County Hospital,
WINCHESTER. (461 Beds.)

Applications are invited from registered medical practitioners, including R practitioners within three months of qualification, for the appointment of HOUSE SURGEON (A). The appointment will be for a period of six months. Salary is at the rate of £175 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, accompanied by copies of three recent testimonials, should be sent to the undersigned immediately.

H. EWART MITCHELL, Superintendent and Secretary.

## The Otago Hospital Board.

UNIVERSITY OF OTAGO AND DUNEDIN HOSPITAL, NEW ZEALAND.

Applications are invited for the position of RESIDENT SURGICAL OFFICER (Senior).

Candidates must hold a Degree in Medicine of a British University, must have been qualified for three years, and have held resident hospital appointments for at least one year. Preference given to unmarried applicants.

The duties will be those of superintending house surgeons with, in addition, certain tutorial work under the direction of the Professor of Surgery.

Salary to be at the rate of £500 per annum (New Zealand currency), with board and residence.

Full details may be obtained on application to the Office of this Newspaper and the High Commissioner's Office.

JOHN JACOBS, Secretary.

Otago Hospital Board, Dunedin, 18th July, 1941.

## Sudan Medical Service.

Applications are invited for the post of JUNIOR (British) LABORATORY ASSISTANT, Male, unmarried, in the STACK MEDICAL RESEARCH LABORATORIES, KHARTOUM.

The salary commences at £E.324 or £E.360 (£E.1 = £1 0s. 6d.) according to age and qualifications, rising by 2–3 yearly increments to £E.780 after eighteen or twenty years, depending on the initial rate. The appointment carries prospects of pensionable service after five years' service. A free passage to the Sudan will be provided.

Candidates should be between twenty-two and thirty years of age, and should hold the Laboratory Assistants Diploma of Bacteriological Technique, and preferably have some experience in Clinical Pathology.

Application forms may be obtained from the CONTROLLER, Sudan Government London Office, Wellington House, Buckingham-gate, S.W.1. Envelopes should be marked "Laboratory Assistant."

## Gloucestershire.—In the Cotswold

Country, unopposed Country PRACTICE averaging over £1000 a year, panel 600, appointments about £30; easily worked. Modern house, 5 bedrooms, with central heating, main water, electric light, h. & c. basins. Garage for two; well-stocked garden with tennis lawn—all in perfect order. Practice with house, drugs, instruments, &c., £5000. Selling owing to ill-health. No agents.—Address, No. 795, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

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